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EDITED BY

SMITH ELY JELLIFFE, A.M., M.D., PH.D.

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ORIGINAL ARTICLES.

THE HOSPITAL GOVERNOR AND HIS STAFF: BEING A GLANCE AT THE PERSONNEL OF A MODERN HOSPITAL AND A PLEA FOR A PERMANENT RESIDENT STAFF.[1]

By THOMAS J. HILLIS, M.D.,
OF NEW YORK.

ALTHOUGH the hospital has come to be a well known and much patronized institution by the peoples of the civilized world, it is astonishing how little is known by the general public about its internal affairs and management. This is caused partly by a selfish carelessness on the part of the public and the determination of the hospital authorities to keep their affairs to themselves.

From this condition of things the hospital to the average layman is a place of mystery and he approaches its portals very much in the spirit Moses did the burning bush. It also may be added that the rank and file of the medical profession have not a very large acquaintance with hospital affairs, but, as chronicles of the spirit of the times, we must state that the mass of the people holds the hospital in respectful awe; to it, it means an oasis in the desert of life and the shadow of a great rock to a weary traveler. It is the stronghold in which the sick are secure—a refuge sure and constant, where can be found, and where only, those capable of understanding and arresting or mitigating human ills. There is balm in that Gilead—there is a physician there.

There is, however, a small minority in our community and in all communities which does not take such a roseate and optimistic view of the hospital situation. To those people "gone to the hospital" has an ominous and funereal ring; "gone to the hospital" to them further means the concluding chapter in a tragedy—a mutilated and gruesome corpse. The hospital, then, to almost all is a sealed book and its precincts are guarded with a jealous care. A rigid censorship is observed: the sphinx at the desk is diplomatic as a Chinese mandarin and cunning as a Turkish pasha; as instance, to the inquiry of one who is solicitous about his friend, he replies, "Am sorry you did not have an opportunity to see him last night, but you know it was against the rules; however, the operation was a very successful one and the patient rallied well, but succumbed to a sinking-spell this morning."

The Governor Himself.—It is not the first time the writer of this paper has paid his respects to the hospital governor, and he hopes it will not be the last. This functionary, although the controlling spirit in hospital affairs, is not its presiding genius, as he hands the viceregal sceptre to a man, calls him superintendent and pushes him to the front.

This superintendent—ever faithful one—for fidelity to trust and obedience to his superiors, his name should be enshrined with the immortals, but we must dismiss him for a while to introduce his creator the governor. This may be in age anywhere between thirty-five and eighty; the former is not usual, but we have known governors even younger; they are scions of regal old houses, socially speaking, and generally leaders of good manners, if not fashion; he is quiet in manner, sober, if not tasteful, in dress and of grave demeanor. The governor can be affable, even sociable, but restrains his joyful emotions in deference to his high position and honorous duties; however, he is often heartless, as a sister of charity, and cruel as a bulldog or a child. There is not a word spoken inside the walls of the hospital about this great man; the silence imposed there by usage is oppressive.

The tongue of gossip in the ward, the staff-room and the nurses' quarters is paralyzed—dead. No governor's name ever echoes through the corridors of the hospital; of him no word is spoken. Nevertheless the busy people running hither and thither on errands of duty or mercy are conscious of his existence; to them he is a force visible in its effects only. However, when the mist of the supernatural is brushed aside and we see as we are seen and know as we are known, the governor is revealed not as a demigod, but as a physical entity made of flesh, bone and blood, like the veriest of mortals.

The board of governors in hospitals may consist of from six or eight to as many as thirty members. It practically holds office for life, as an ex-hospital governor is as rare as a white blackbird and a dead governor is as scarce as a dead eagle or a dead mule. They hang on to office with great pertinacity and their perpetuity comes about in this way. When a governor dies his colleagues in the board—all chums and fast friends, and priding in their conservatism and exclusiveness—get their heads together and seriously and confidentially talk of a successor. In this matter their power is undisputed; they and they alone are the sole judges of him who is worthy the high honor to sup with them. The lucky man is always he who is in sympathy with their ambitions and tastes; he becomes duly installed and one of themselves. This is undoubtedly why the boards of governors of hospitals move with such little friction, suffer no change and exist for genera-

[1] Read before the New York County Medical Society, May 28, 1900.

tions with singleness of purpose and homogeneity of feeling. Then, when death removes the governor its victory is not complete, for his counterpart and prototype is again at the counsel board—the line of succession unbroken and, although dead, he yet lives.

As was stated, the board of governors consists of a varying number of members, a committee of which meets about once a week in a room in the hospital, set apart and dedicated to it. In this room ambitions are satisfied and aspirations blasted; here the applicant for staff honors must apply; he may have put himself in training for two or three years to fit himself for this application, walked the hospitals on the Continent, got himself talked about abroad, had his coming-home heralded in society papers, made display of some of the trophies of his literary and professional successes, the bee in his bonnet is buzzing, the surgeon's knife in the operating-room above is almost in his grasp, but his hopes perish. The other fellow, who stayed at home and knew how to manipulate the wires, social and political, won the prize.

The governors are what is known in common parlance men of eminent respectability, but we must not forget that notoriously unscrupulous and crooked financiers often pass as such; they are, as a rule, retired business men and capitalists and have a hankering for the financial flesh-pots and the excitement of the business chase, for most of them are listed as trustees, directors or vice-presidents in various enterprises. The governors are nearly all found in church-pews on Sunday; in the church they are all-powerful and strong, as the iron buttresses that support the sacred edifice. The governor is strong in the vestry-room and makes and unmakes clergymen at will, as he does surgeons and physicians. He moves silently and without fuss in the accomplishment of his purpose; he will not be a deacon, since the duties attached to that position are boisterous and over-noisy for him, and objects to exhortations and praying in public, having no desire to emulate the Salvation Army captain or the recent convert at a city mission.

The governor is a model at church and deeply imbued with religious feeling; with him there is an abiding zeal; he may not always have been religious and may have come into the church late in life and in good faith, not for the relaxation that it brings, as in the case with his hospital duties, but of being engaged in a good work and for the sop to conscience to be found at it in the evening of life.

The Superintendent.—He is the grandest handiwork of the governor's creation. The man with a jealous care guards well the interests of his regal master; he is a shrewd man and one adapted to assume many rôles, often that of a clergyman; sometimes that of an undertaker, and always that of a business man. He is sometimes equivocal, often taciturn, yet, on the whole, it must be admitted that, taking him all in all, he is a reasonably fair man, not a tyrant or driver as some have described him to be. He has great influence with the board of governors to whom he sends his weekly report and before whom he is often summoned for counsel and advice, and, further, to give an account of his stewardship, which, indeed, is seldom discredited.

The superintendent is guarded and exceedingly cautious about the information he imparts in the governor's room and it is received without question by his superiors. Discernment and tact are qualities essential for a superintendent and he has got them. Although having a quasi-supervision over the medical department of the hospital, he is careful about interfering with the house staff except in minor matters, and never ventures a suggestion on a medical appointment. That function is for the governor, and the superintendent is shrewd enough to know his part and recognize his limitations. The business policy of the institution is his forte. To organize a system and make that system successful is a desire near his heart—to make his domestic arrangements models of simplicity and order and present the appearance of a well-ordered household. The various parts of this complex mechanism he wishes to run smoothly and with as much regularity as possible. He wishes a house not divided against itself. If he could surround himself with faithful and efficient servants it would be a factor contributing to this success. To accomplish this end he has the good sense to retain those who have been tried and found worthy. If anything detrimental to this faithful officer be said, it is because of his longing for the ideal and his fidelity to his trust. He is simply an executive officer without veto power; his business is to apply the rules made for his guidance (although he is supposed to make them himself) by those above him. Occasionally, those rules are distasteful to him, but superintendencies are not going begging, so he holds his chagrin in restraint and hangs on to his office. It is no fault of his that he is a sort of buffer or stop-gap between angry and blanched faces directed at the governors for some real or fancied outrage, as an autopsy without permission; an operation that was unjustified or a rebuff from the office, his not to reason why; his to do and face the result even if it be an imprecation from a patient's friend, a defiant or disdainful glance from an orderly or a setback from the house-staff because of the promulgation of some distasteful and obnoxious rule.

The Trained Nurse: Her Success and Failure.—This creature is a picturesque and interesting feature of hospital service, although not belonging to the staff proper. Without her it would be stripped of pleasant surroundings and robbed of much of its usefulness. In the selection of raw material from which the nurse is evolved the governors are wise in their generation, and here, too, the hard sense of their superintendent comes prominently into view. Picking his maidens (for they are almost all unmarried and the occasional grass or bona-fide widow that creeps in is hardly worth noticing), he uses the greatest caution and

much circumspection while, in a quiet but thorough manner, he investigates her past (and, to her credit be it said, she seldom has a past), and looks with keen eye over her proportions. If she be comely of person and fair to look upon, he doesn't tell her so, but, if otherwise, the chance is she is rejected. The governor's man in this matter is an iceberg and as devoid of feeling as an Arab trader in the old Cairo market when picking Caucasian girls to amuse a sultan. The name of a politician attached to her credentials has no weight with him; that of a prominent divine is considered with respect, but the name of a bishop is powerful and second only to the endorsement of the governor himself.

The efficiency and usefulness of the nurse is conceded and a good word said for the system that created her and called her into activity. The trained nurse, unlike the young doctor who walks in her shadow on the hospital tiles, reaches her highest development before the day of her graduation. She will never again be as efficient as she was before that day; then the measure of her competency was complete and the springtide of her usefulness at high flood. As she departs from the hospital, pressing her diploma to her heart, for as yet she has no lover, she leaves behind her pleasant memories and half her efficiency. Like the hothouse plant, no longer under the genial influence of warm and kindly surroundings and pleasing companionship, she shrinks, withers, and becomes stunted in proportions. The soil outside is exotic and in it she does not thrive so well. She differs markedly now from the young M.D.; he does not stand on ceremony and refuse a patient with extended hand holding a ready fee because that patient is not up to him in social standing, or because he lives in a tenement district. This fact does not deter her sister—the lady physician—who will go into the most humble lodgings, fraternize there with the poor, and is grateful to get an opportunity to practise her profession while ministering to their wants. The trained nurse will not take the bit of uncertainty and privation in her teeth and run the gamut of a capricious, but harmless criticism that she may reach success. Oh, dear, she will not mingle with the horrid public, why, she is above them. Good antecedents and good training keep this fact fresh in her mind. Is she above her business? Does she fail on this account? We are afraid her reluctance and exclusiveness do not help her. Is there floating before her eyes the phantom of a millionaire, a palatial residence, sumptuous table, downy bed and a French maid with a child who is down with the mumps? We repeat, her fastidiousness and exclusiveness do and will forever shut her out with the masses and cause her not to multiply on the earth. Others are making a fight for success. Will it come to her of its own volition?

"Will she be carried to success
On a flowery bed of ease,
While others fight to win this prize
And sail through troubled seas?"

The Male Trained Nurse: His Virtues and His Vices.—The word trained nurse, as in general use, almost always means a female. There are, however, male trained nurses in some of the general hospitals, but it is usually conceded that in most respects they are inferior to the ubiquitous little woman with the apron and white cap, who in the hospital is at the height of her glory and on her native heath.

The male nurse is somewhat churlish and often clumsy from a superabundance of adipose tissue or rheumatism. There are few things things he can do that cannot be done better by the woman-nurse and the few things that he does had better be done by the house-surgeon. Often a bungling nurse, in an effort at catheterization, has been known to rip up the urethral canal in a shocking manner and to sow the seeds of stricture and serious genito-urinary trouble for his victim during the remainder of his life. Again, he is often instructed to use the hypodermic needle as a means of medication or for the relief of pain, which is done many times without judgment, as to the depth of tissues involved, leaving boils, scars and often ugly ulcers, with occasionally troubles of a serious character from reflex disturbances.

The female nurse is, as a rule, more congenial and always more acceptable to the male patient. There is a more subdued and refining influence in her ministrations. It is true there is a little awkwardness at first, as pleasing as painful; it, however, soon wears off, giving place to an easy contentment.

Measure for measure, the habits of the male nurse are not to be compared with the female.

A large per cent., unfortunately, of the male nurses are intemperate and given to the use of drugs, such as chloral, morphine, cocaine and the like, and, indeed, it is often wonderful how expert one of them is with the hypodermic, when practised on himself. When he was handed the hypodermic needle and instructed in its use, it was hardly expected that he would become a victim to its soothing influence himself, but he has, and this fact has impaired his usefulness and made him a *persona non grata* in many a sick room.

The male nurse yet has a place, as he is indispensable to the invalid wealthy old gentleman, where he fills the rôle of valet, nurse and secretary; he is also in demand in the sanitarium, where strength, as well as intelligence, is a factor to be considered.

The Orderly: His Temptations and His Triumphs.—The orderly is a handy man and Jack of all trades around the hospital. Of all the *attachés* and attendants he is by far the most loquacious and has decided opinions of his own on the relative merits of anything and everything, and holds himself of as much importance to the welfare of the hospital as anybody else around, not excepting even the superintendent or general staff. In some hospitals he takes the place of male nurse in dealing with men patients

in matters that might offend the delicacy of the female nurse, as in the case of sponging, and the giving of clysters, or sometimes the taking of rectal temperature, or in the lifting and changing of helpless patients. However, they take little interest in this work and generally from this fact do it badly.

In recent years, a few instances are on record where hospital orderlies have shot like meteors to prominent positions on the staff and in the laboratory; where they have jumped with phenomenal celerity to fill positions, professionally of the first importance. These were hospital graduates in hard luck and down on their uppers, glad to secure an opportunity to make a start, and who attracted the attention of their superiors, to whom they were very assiduous. The orderly, as a rule, is not a success; he is dissatisfied and kicks in the traces. Too much confinement does not suit him, so he gets intoxicated, abuses everybody—sometimes those who have befriended him most. When he sobers up and his spree is over he repents and promises to do better, which promise he does not keep.

The Ambulance-Surgeon.—The ambulance-surgeon is not an inconsiderable member of the house-staff; indeed, he is a most important functionary in whatever way we may look at him, for although a very recent arrival in hospital service, onerous duties are thrust on him. It is for him to say whether a patient is or is not a proper subject for hospital attentions; to say, and definitely determine, as far as the hospital is concerned, whether a man or woman is intoxicated or suffering from congestion of the brain as the result of trauma or other cause, for him to diagnose fracture or sprain, internal hemorrhage or simple scalp wound. The ambulance-surgeon has to do all this and to do it quickly; he has sometimes to do more, for very often application is made at the hospital for the admission of a patient. Although that patient may be attended by a well-known and capable physician, the rule is, that the hospital cannot take his word, and it very properly straightway sends its own physician, who is none other than the ambulance-surgeon. He has to tell offhand and at once what disease the patient is suffering from, and whether in his judgment, which is final, the patient can be admitted into hospital service.

The ambulance-surgeon, weighed down with responsibility and exalted into high place, is a proud man, and why shouldn't he be, since matters so important are entrusted to his care by the thoughtful and conservative governor? On this very young physician, his antecedents and exploits, much can be written, as he is the subject of strange experiences every day of his official life, which consists of just six months, after which he is moved a step higher.

On the lips of the populace is the word "ambulance-surgeon"; the dames, denizens and juveniles of the tenement districts know him as they do the organ-grinder, the coal-peddler or the piper who makes the alley lively with ragtime music. Policemen on the streets know him and they have more than a speaking acquaintance, for affectionate greeting between them is of every-day occurrence; indeed, they often call each other pet names and know full well the benefits accruing to each by a blending of interests.

The policeman's club makes business for the young surgeon, who is in need of skulls to trephine, scalps to patch and skin to graft. The policeman's club is a factor in the future success of this surgeon, by now increasing his opportunities for clinical experience. For this reason, the young surgeon always hold himself ready to be of assistance to his friend, the policeman, who occasionally is in a little trouble because of the too liberal use of his club.

The ambulance-surgeon has also more than a passing acquaintance in the station-house, for he is as well known there as a Saturday-night drunk, to whom he dispenses his professional aid after the peace officer is through with his pastime of raining blows on the wretch's unprotected head, with the bludgeon which is the insignia of his authority, and a thing dear to him, for his last request is that it be placed in his hand, lie across his breast and be interred with his remains. A laudable ambition, for it has secured him victory from the weak and many times enhanced his opportunities for promotion.

It is not an uncommon occurrence for all three—the police-officer, the victim of his club and his friend, the surgeon, to stand before the sergeant's desk in the station-house. The ambulance-surgeon came here for a double purpose, to bind up the wounds of the victim of the bludgeon and to say a word at the desk in commendation of his friend, the policeman, in attesting to his good intentions and kindness of heart. The sergeant, inured to scenes of bloodshed and trusting so implicitly the word of his subordinate—the peace guardian—in spite of appearances, in spite of facts and in spite of the protests of six eye-witnesses to the outrage, who declare that the helpless man has been unjustly assailed, with a pitiless smile, a leer and a cruel, curling lip, speaks his threadbare part: "Surgeon, dress his head; Officer, lock him up and appear against him in the morning." He never appeared, as the prisoner died in his cell during the night from cerebral hemorrhage, although the sergeant's blotter and the note in the ambulance-surgeon's case-book both say, "acute alcoholism and a slight scalp wound."

The House Staff: Its Composition and the Variety and Extent of Its Labors.—This is the real staff of every hospital in the city. This staff is always on the ground and is ever ready to do all in its power that chance or premeditation throws in its way. The visiting staff, although nominally superior to the house-staff, is provisional, vicarious and uncertain, as the latter is only at the hospital occasionally to exercise a supervision over the real staff. The house-staff may be said to consist of two parts, a surgical

and a medical division, each part composed of three men. (In some of the larger hospitals, however, there are several divisions.) The young physicians and surgeons find their way into the hospital through competitive examination.

The superintendent, who was so clever and happy in his selection of young nurses, has nothing whatever to do with the choosing of these young men. If he had, no doubt things would be a little different. They have been selected by the visiting-staff, although that staff may have never seen their faces. The examiners appoint the men who present the most satisfactory papers, although it appears in recent years in some hospitals that a competitive examination on the cadaver is required and the lucky student who can describe Poupart's ligament, define Scarpa's triangle, and point out the anatomy of the internal abdominal ring is apt to be the successful candidate. That examination and its results at once account for the striking physical contrast between the nurses and the house-staff of hospitals. The nurse had to have some personal attraction and a suppleness of figure along with her other qualifications, or the superintendent certainly would have rejected her. The examining surgeon sees his new-fledged offspring dimly as through a glass, while the superintendent sees his embryonic nurse face to face. This is the key why we often see a hunchback, a dwarf and a freak wearing the livery of a hospital interne, while behind him, with queenly stride, comes marching along the superintendent's choice, the trained nurse.

The three surgeons composing the house-staff are not standing on the same level professionally, as they are ranking officers. The senior of the three may be the youngest in years or he may be the oldest, lame and pockmarked, with a hump on his back (that sort of thing does not count in interne hospital service). However, they are all young in experience and the director who is required to know much and instruct the others may be only one year out of college himself—yes, he who controls the actions of the others has only a year's professional experience to his account.

The senior surgeon ranking next to the house-surgeon has not such a good showing, for he is only seven or eight months out of school, but, thanks to a perfect hospital system, he is nevertheless senior surgeon. The lowest ranking officer is the very young junior, who may have graduated four or five weeks previous and is making himself acquainted with minor details before being put in charge of the ambulance, or made ambulance-surgeon, an individual of whom something recently has been said.

The house-staff, we can now see, is made up of very raw material and without much experience; the chief and head of the system is in practice about a year, his assistant about half a year, and his junior a couple of months. The combined experience of the whole lot will not cover two years—rather risky to leave a hospital for twenty-four hours every day in their keeping. It is no fault of the young gentlemen that this is so; it is part of a system which demands that they must get out next year to make room for others. The rules of the hospital say that no member of the house-staff can serve more than a few months; he must move on to make room for other successful candidates who are soon to follow. With this state of things the hospital is like a merry-go-round, where new faces are seen in the saddles every time the gong rings.

It is midnight. The little band known as the house-staff must have some rest, so part of it—the head—is exhausted from his labors of the day, and he retires for the night. Some one must take his place. Who will? Is he an officer of equal rank? No; the rules of the hospital don't permit this; he is only a subordinate, the senior surgeon, but he is not feeling very well himself, so he went to bed, tired, early. There is now left but the young junior, but he rises to the occasion, assumes all the responsibility and directs the surgical affairs of the great hospital to his own satisfaction. This young surgeon now at midnight stands for and represents all that is good and bad in hospital service; in fact, he is the hospital, although out of school only a few weeks.

Where are its vaunted surgeons, the men whose names have given the hospital prestige? Not one of them is walking the corridor or on duty at this midnight hour in anticipation of an emergency? Is there likelihood of an accident, or do accidents occur at night? If so, it will find the hospital, the whole hospital in the absolute charge of a young physician without any experience, but who is eager for some, and ready to practise on anybody and everybody, without a moment's thought or a minute's notice. The slumbers of the night-clerk at the desk are broken by the clang of the ambulance-bell; it brings two people who are desperately wounded from the bludgeon and dagger thrusts of assassins; they have been sent to the hospital by the advice of the family physician, who was called out of bed to give counsel in this trying hour. On ascertaining the extent of the injuries he requested that they be sent at once to the hospital—it was the proper place for injuries such as theirs. He knew the surgeons there, men with wide experience and high reputations. "Send them at once," said a relative who stood by. "At the hospitals they will be attended by the best surgeons and be provided with home comforts, indeed if there is any chance for saving their lives this chance will be found in the hospital." The clerk, only half awake, rings his bell for an orderly (who does not appear at once) to bring the surgeon to the office, where he is informed of the state of affairs.

He examines the new patients who are lying in cots in the emergency wards now for nearly an hour, with blanched faces and bleeding in-

ternally. One is unconscious, with stertorous breathing, full and bounding pulse. The other alive to everything that is transpiring around him, with a thin and rapid pulse, asks pleadingly the orderly for water, but that functionary is callous and pays not the slightest attention to the wounded man's request. The young junior, somewhat alarmed at the state of affairs, informs the house-surgeon, although at first reluctant to break his slumbers. Together they examine the wounded patients and proceed about their work with method and coolness. They decide what steps to take—an operation in each case necessary to save their lives. The house-surgeon rings up the member of the visiting-staff to whose service the injured ones are consigned. After hearing a brief history of the case by telephone, he tells the house-surgeon he has a touch of rheumatism, took twelve grains of phenacetin, is perspiring, and does not think it safe to venture out, especially as he is to perform an operation in New Haven to-morrow, and adds, "Why not ring up Dr. F.? I helped him out last Spring; he will help me now." Dr. F.'s servant answers over the 'phone to the inquiry of the house-surgeon, "The doctor is at a ball in the annexed district and cannot now be communicated with."

The house-surgeon is now making a desperate effort to secure the services of the visiting-staff, but so far those efforts have met with failure. He, however, has one more chance, but he suddenly recollects that Dr. B. sailed for the Bermudas yesterday for his health. Now, although disappointed, he is not crushed. Two hours have passed since the desperately-wounded man and woman were admitted to the hospital at midnight; they are still in suspense and alone on the cots without any home comforts, not even a drink of water. Their condition is momentarily growing more serious, which fact is recognized by the house-surgeon and his two assistants, who are very much interested in the coming operation and eager to begin. Preparation is rapidly made. This little band of house-surgeons has agreed upon what to do. The house-surgeon has performed four or five operations during the day and early evening, all emergency cases, but ones not presenting the gravity of the two now to be dealt with; he is tired and would like his senior assistant to take his place at the operating-table, but this he cannot do because of a painful finger from an injury he received in the autopsy-room while examining an interesting case for the staff.

There is now left only the very young junior, but he is a host in himself, and he begins by trephining the skull of the unconscious man, which he does with dexterity and in an incredibly short time. Then he resects the intestine, sutures the liver in the case of the other patient and does it without a tremor, although his medical assistant has to transfuse twenty-one ounces of saline solution to keep the patient alive during the operation.

One hour after this operation a noted chess-player is taken into the hospital suffering from angina pectoris and immediately after a hotel-keeper, stricken with apoplexy. They were left side by side in the emergency-ward (as were the others who have so recently undergone surgical operations) for about an hour and a half, until the house-physician's assistant found it convenient to diagnose their cases, when each is removed to his respective quarters.

At 11.30 next day the house-physician and the visiting staff, Dr. Y., had a few words together. They were that a man died who was brought to the hospital at 3 A.M. The cause of his death was doubtful. Would he, if possible, arrange for an autopsy? There were whisperings at two funerals in Manhattan Borough, the friends of the dead consoled each other in the fact that misfortune and sorrow were not so hard to bear when it was recognized what noble efforts were made to save the lives of the deceased. Immediately on being stricken, they were taken by loving hands and placed in a first-class hospital, where they received the kindest attentions and the personal care of noted physicians and surgeons. "Yes," put in another friend, who joined the little group, "we have nothing to blame ourselves for, as the physicians who attended our friends in their last hours were noted practitioners, and one of them—a surgeon, Dr. F., thirty years connected with the hospital."

The Visiting-Staff, Surgical and Medical, Whose Services the Governor Practically Controls Free of Charge.—The visiting staff is the heart, the brain, the vital spot of hospital service. If it is crippled from mechanical or other causes the efficiency of hospital service is impaired, destroyed. Without it the hospital is a shadow, a name only, a thing to mock at. If that service is complete in every part, it contributes to the welfare of the people and inspires confidence in the general public. In addition to the satisfaction it gives the physician, he is sure that his patient, who passes from his charge, receives all the care and attention that a reasonable man can ask and a well-regulated institution bestow.

The visiting staff is chosen by the board of governors for various causes. In the first place, for their known ability; second, unfortunately, for social and other reasons. It is, however, very doubtful if any social influence could aid an applicant who is known to be an inferior, careless or reckless operator, or a stupid and blundering practitioner. In the hospitals, however, under political control, there are professional men seen every day walking the wards as visiting staff who are the butt of ridicule for the very young juniors who graduated two months ago, and, indeed, even for the nurses and orderlies.

The poor service in public hospitals comes about in this way: Favors are asked by the friends of an applicant for staff honors, and from one who cannot well refuse, because he was only recently himself the recipient of kindnesses

at their hands, and well known to them to be a free-lunch patron, lifted from the depths by some erratic, illogical and senseless political upheaval. Probably the very worst staff service imaginable is procured and rendered where the appointing power is in the hands of clergymen or a religious order, regardless of creed or denomination. Time and again appointments have been made by them of men heretofore unheard of outside of a small admiring coterie (the center of which is the appointing power). A great deal of nonsense is bandied about in popular circles and other places concerning the relative merits of this or that surgeon or physician, but experience has shown that his place can be filled without trouble, and that if the ground opened and swallowed all the conspicuous physicians of to-day, to-morrow their places would be occupied by others from the great unknown—the ocean of medical material waiting and watching for the opportunity to come. Great physicians there are, no doubt, inside and outside of hospital circles, but no trumpet-blast is blown by press or public for them, because the subjects of their professional triumphs are publicans and sinners, not poets, statesmen, or horse jockeys.

The visiting staff is connected with the hospital only in a strictly business sense; it does not eat or tarry there; it has to be up and about; it sleeps in its own bed, attends to its own private practice as best it can, which practice, compared to hospital service, is only a side issue and, in the eyes of the governor, a matter of small importance indeed. On arriving at the hospital the staff registers and is then prepared for business. Patients in the wards are examined, who were already examined and tenderly cared for by the house-staff the night before; that is, if they are not dead or their cases considered too trivial to be brought to the notice of the visiting surgeon or physician, as the case may be. The members of the visiting staff, the men who give character and prestige to the hospital, have no influence with the governor; indeed, the latter thinks that the glove is on the other hand and that the compliment to be and to live should come from them, not from him, but, like all rules, there are exceptions to this one, for once in a while a surgeon or physician, by his conspicuous ability, or his tact, or both, impresses and finds favor in the eyes of the governor, which fact makes his influence considerable or paramount in staff appointments, and even in the business affairs of the hospital.

In some hospitals the visiting staff holds meetings to consider the expediency or advisability of to do or not to do, to cut off a member or leave it intact. Many patients are saved their lives or the distress of unsightly disfigurement by the ripe judgment and the application of common sense displayed in those staff consultations, and it is rather unfortunate that they are going out of fashion, and a matter of such moment entrusted to the decision of one man, who has found favor with and is exalted by the governor.

This man, he dubbs with the title of medical or surgical director and places the hospital in his keeping. This director is a veritable dictator and the only individual—medical man—who has been ever known to measure swords with and actually fight the governor. He, of course, suggests all appointments under his directorship, and excellent care he takes that his assistants, not his coadjutors, are men after his own heart, cronies, as it were, who dance when he draws the bow.

This system does not work well, as it is wrong in principle and vicious and degrading in practice, for every physician has his peculiarities and style of working, although his results may be just as satisfactory as those of his director, yet differing from his in many features. He cannot and will not adopt the methods of some surgical director (who is professionally his inferior, but who is placed over him perhaps by the caprice of the governor), and if he does it will not be to the interest of the person who is to be operated on. The consequence is, the so-called director has to instruct young surgeons in his methods, men who look up to him as mentor and master, thus throwing away the opportunity for intelligent, open and manly expression of opinion as to the relative merits of a particular case.

Surprise is often expressed by the visiting surgeon because he was not consulted about an operation or operations of a capital order, performed by the house staff in his absence. This is easily answered, and the surgeon's wrath appeased or placated by the plausible plea of great emergency. Then, again, cases are diagnosed and remedies applied in the absence of the visiting physician to newcomers in the wards that cause that gentleman to smile, and he would laugh outright were it not for the grave interest involved and the professional courtesy and leniency tradition demands for his interne.

The members of the visiting staff hold office as long as they can; there is a fascination of a hypnotic order and a halo of a will-o-the-wisp elusive whispering, hope of a future by the crystallization of a chimera. These hopes never ripen and the subject of them in his declining days sees them perish, one by one, before his eyes and, like soap bubbles, disappear beyond the vista of realities. It is often painful to see with what tenacity a visiting member of a hospital staff holds over after his usefulness is impaired by age, even old age.

It has been our misfortune to witness time and again octogenarians cling to the visiting chairs of hospital service, sticking like barnacles to water-logged timber. There the old man remains, going around his operating-table, summoning the little nervous force remaining in his cadaverous anatomy to essay an operation that he once did so well. The old surgeon flourishes his knife over the unconscious patient, who happily cannot feel the steel or see the tremor. He trusted his life to the care of the great hospital and to the skill of its surgeons. Did he make a mistake? Was his confidence misplaced? Indeed a bullet

plowing through the solar plexus of a patriot, fighting for his country, is not as dangerous as the flourish of the old surgeon's knife to the prostrate form of him who hoped so much and so well, because he was resting in the shadow of a hospital and being operated on by expert and skilled hands. Once a great light in the surgical world and a leader in his profession, now a landmark, ambling around a table covered with edged tools, at seventy-five or eighty, is not inspiring to him who contemplates the future of his profession with a lively hope.

This old surgeon refuses to recognize that he is not still young, and doubtless this illusion furnishes the motor power to keep him in the professional harness, when he is in reality a jaded beast in much need of rest. His spirits at times are high and prompt his heart to be young, and his demeanor to be gay, but nevertheless there are areas of depression, storm centers that often engulf and overwhelm him and tempt him to throw away his scalpel and quietly resign himself to the inevitable. No doubt it was while contemplating these conflicting emotions in the human heart the poet penned the well-known lines:

"Know, then thyself, O man,
Enough for man to know."

The age limit of surgeons particularly has been the subject of discussion many and many a time in the governor's room, where votes for retirement have been the case with the honorarium of consultant or emeritus, but some governor, himself old, has a memory that dates back to a time when he and they were young, and sentiment, more than judgment, contributes to leave the old men in the chairs they love so well. There is little doubt that this is one of the most stupendous of the many blunders the governor has made, and fortunately, happily for life and limb and the public weal, this is beginning to be recognized. For at present we do not see so many of the grand, rugged, weather-beaten, stalwart old faces in the corridors or on the way to the operating-room as heretofore, but instead, we are met by hatchet-faced, keen-eyed young and middle-aged men, quick of manner and with nervous tread. They are those who have been knocking at the door and whose importunities the governor has heeded.

An old physician can give valuable advice; so can an old surgeon, but the latter should put away his scalpel, go back to domesticity and wheel his grandchild around the square, be a Santa Claus in the play-room and indulge in amusements that are harmless and healthful—not death-dealing like the shining steel.

Conclusions.—From what has been recited in the foregoing chapters it can be seen at a glance that the hospital is in charge of what is called the house-staff for about twenty-three hours out of every twenty-four, or, for that matter the whole twenty-four, as the time the visiting staff is on duty it is practically in the house-staff's charge too, because the visiting surgeons make no freedom of any kind and always recognize the fact that they are only visitors, and visitors don't generally go prying around fault-finding; they wish to be just what their name implies, visitors. Before those visitors take recognizance of a case it is necessary that it be brought to their attention officially, and this is done by the real staff if it sees fit. It is the judge, the sole judge, of the fitness, and the occasion for review and further examination, by the gentleman who came from his home to walk through the wards for the accommodation of the governor, who he does not see, and to whom he sends no bill for professional services quarterly.

The case yesterday that gave the house-surgeon anxiety because it was not doing well after the laparotomy and to which he called the attention of the visiting surgeon, has slightly improved to-day; while it yet presents grave symptoms, the visiting surgeon does not see it for the reason that the house-surgeon thinks he can handle it alone. He is also acquainted with the fact that the same surgeon has an out-of-town consultation for the afternoon, so the very sick patient from assurance or necessity is denied the benefit of the ripe judgment of the visiting surgeon who operated on him so skilfully two days ago.

After the operation in the amphitheater the visiting surgeon has to perform another and at once, so he leaves details to his house-surgeon, who in turn leaves them to his junior. Those details are of the most important character, for they include removal of sponges from the abdominal cavity, the cleansing out of that cavity, the sewing up of the gaping wound which the operating surgeon left behind him; the transfusion of saline solution and the hypodermic injection of strychnine in case of collapse; then, the bandaging.

All this is included in the laconic remark of the surgeon when he is through with his cutting, to the house junior, "Doctor, do the dressing." Nor, indeed, is this necessary, as that gentleman is waiting and takes this remark as a matter of form. It is his part of the performance and on this account a great many cases turn out badly. The operating surgeon is an expert with his scalpel and knows his anatomy as well as a divinity student knows his catechism, but nevertheless he loses his patient and he is puzzled to know the reason why, as every symptom pointed to a favorable termination of that case and to a rapid recovery.

If he will take the trouble to step down to the autopsy room he may there discover the cause of his patient's death. In the abdominal cavity were found a sponge and a bunch of silver-wire sutures. The house-surgeon's assistant—the very young junior, left them there, not intentionally, but he forgot them while his attention was being called to something else; for, remember, he is an important personage now (although young and inexperienced), and wont to give

counsel and often admonition to those about him. Indeed, if the pathologist's assistant of a hospital chose to open his mouth (a thing he will not do on any account) he could tell tales, for he has relics rare and curious that he picked up from the abdominal cavities of the multitude of cadavers that came under his observation, including the old surgeon's snuff box and the nurse's love letter that fell from her bosom in her excitement, as she thought, on the floor, but in reality into the gaping wound under her eyes now yawning to be stuffed with iodoform gauze, already in the quick grasp of the very young junior, who does the dressing, which is no less important than the operation itself.

In spite of every precaution, such blunders have occurred in the past, and are occurring now in all hospitals with the probable exception of those controlled by private gynecologists, where the greatest care as to detail is observed. It appears that little can be done to protect the abdominal cavity from being a veritable junk-shop, although the most elaborate mechanical devices are directed against the bacteria. It should be the first and last thought of the operating surgeon to do all in his power to save the life of his patient, and we believe it is; but should he leave the operating-table on which is stretched a human being with a gaping wound in his flank, to a set of young juniors who are too matter-of-fact, too indifferent, too callous, and too full of assurance to properly protect the interests of the dissected man, which interests mean his life? Their hilarity and assurance would not so often reach the vapor and gaseous point were they ten or twelve years older. Years would bridle and hold in restraint the senseless and heartless pranks that at present are no credit to the hospital amphitheater.

Essentials of Success.—The thing that leads to success is not eccentric genius that at times electrifies and intoxicates the brain, but the genius that masters details; it has in every instance commanded and operated the road leading to success. Rather resign from any position where one is not able to pay attention to its details, for poor results are sure to follow. This is an axiom and almost a natural law, and one long recognized in business circles, but it has not yet found its way into the operating-room of our hospitals.

The financier, half through with the business of negotiating a loan, will not hand his half-finished enterprise over to a junior clerk or an office boy to be completed, but will follow up every detail, pick up every thread until his project is complete. The surgeon in the amphitheater has successfully performed a most dangerous operation, but it is not complete when he hands it over to the roistering junior through courtesy and the grace of the governor called surgeon.

The infinity of detail so essential to final success, the only success as far as the patient is concerned that is worth counting, has been transferred to other hands, the hands of incompetency and inexperience. By heeding detail the surgeon largely enhances his usefulness to his patient, if not to the governor, who has collected about him, the surgeon, a lot of lads, put them in uniform and called them surgeons. We will show later on when those youngsters begin to have sense, that is, their judgment ripened and some appreciation of what is essential in a surgeon or physician, that the governor dismisses them in order to make room for another batch of juniors to play at surgeon for a while. This mode of procedure on the part of the governor, to the writer's mind, is an extraordinary one and he thinks bordering on the idiotic.

When at midnight in case of an emergency two men were brought to the hospital, presumably to get the benefit of the best surgical skill, they did not get it. The head surgeon, the so-called medical director, was sick and in bed at his lodgings; his coadjutor was at a ball and the other surgeon completing the corps, which constitutes the staff, on duty for the term, was at Old Point Comfort on a pleasure trip. The two operations, where experience and coolness enhance success, were done by a junior surgeon only six months in the hospital, as the house-surgeon was fatigued and his senior assistant had a cut finger. The family and friends of the men who were operated on were ignorant of this fact, which fact is that the operations were performed by a student.

The student, no doubt, did his best, and probably was a clever lad, but not as capable as one having more experience, certainly not as competent as the operating surgeons attached to the hospital. The hospital had prestige, because it was known to have four crack surgeons on its visiting staff, but here at the critical moment not one of them is available. Could one of them by his superior skill and deftness of touch have saved one of those lives? Could he have saved both? We will leave the governor to answer.

The hospital superintendent did not acquaint the wives of the deceased with the fact that the operations were performed by his very young junior; he didn't think such a course prudent, for if he did he was well aware it would work incalculable injury to the hospital and bring discredit on its master, the governor, whose interests he must protect at all hazards, although such protection should involve the life and limb of a citizen or citizens.

When it was incumbent on the hospital, which means the governor, to send a medical expert to examine into the case of a sick woman, who through a friend made application for admission, it sent a junior physician, and he rejected the applicant on the ground that she was suffering from a contagious disease, which diagnosis was incorrect, as she was admitted next day to another hospital after her case was properly diagnosed by a member of the contagious-disease department of that hospital.

The hospital junior alarmed this household; put discredit on their family physician, besides

putting another hospital to unnecessary trouble. We see the same youngster again at the station-house, where he flippantly and with bumptiousness tells the sergeant, "A scalp wound and acute alcoholism," when requested by that functionary to diagnose the case for register in his archives. That man died in a cell with the stigma of being a drunkard and his family disgraced, when the facts were, he became dazed by an attack of vertigo, was reeling about the sidewalk, when a policeman grabbed him by the collar and accused him of intoxication, an accusation he was in no condition to deny, and forthwith lugged him to the station-house, and while on the way beat him brutally for a fancied insult; then at the sergeant's desk accused him of crime. The hospital junior, who represented the governor, looked lightly on this case—indeed, it had several features that amused him—and refused to take the man to the hospital on the plea that he was drunk, although in reality dying from cerebral hemorrhage, and did die four hours later in the station-house cell.

Incompetency: Its Price and Reward.—The disastrous results of inexperience are apparent every day in factories, foundries, mills and other places, but the victim of him who is incompetent and inexperienced is not some one else but himself. His finger is crushed, or his hand cut off from carelessness in handling a machine, or he is blown to pieces because he does not understand his steam gauge, or he falls from a scaffold because he does not properly adjust the tackle. These men are the victims of their own carelessness and pay a high price for being unskilled in their trade. Now there is another kind of incompetency, the irresponsible kind where no harm comes to him who distributes it and exercises it on his fellow-man, although it may mean death to that fellow-man. This is the sort of incompetency the ambulance-surgeon displayed at the police-station, when he declared the man suffering from fracture of the skull was intoxicated, dressed his scalp wound and sent him to die in a cell.

Another kind of incompetency is the error of judgment that prompts a surgeon to hand over to a junior most important details of an operation, and ones on which the success or failure of the operation hinges. Another kind of incompetency, long practised in hospitals, and one bordering on if not actually criminal is the kind that leaves patients who are desperately wounded or desperately sick on tables or in chairs in the waiting-room until life has almost flickered out, although the friends of those patients are vainly pleading with the clerk on duty in the office to make more haste. Here hours, valuable hours, are lost cutting red tape, and when the tape is cut it has no value, but the patients are in much worse condition than when they entered, and the chances for their lives have very much decreased.

Time is lost and errors of judgment made because the men on the house staff are not ten years older. Then their judgment would be seasoned and character sufficiently formed to decide momentous questions with some precision that require solution on the spur of the moment. Those blunders in hospital service are committed by young gentlemen, now surgeons and physicians, who, only five years ago, left the nursery with its legendary behind them; they have not been out into the world to learn of its ways; they have seen nothing of the struggle of life's battle except the kicking of football. This is all before them; they will by and by explore that, now to them, unknown land, yet notwithstanding this they are thrust into positions of the greatest responsibility, called on every hour to decide offhand questions that involve life and limb—to determine in a moment whether life or death is your portion or mine—questions that demand the ripest judgment and the widest experience. As we said before, they are bright boys, most of them, and later will be able to stand in the breach and no doubt do credit to themselves and justice to the unfortunates who may come under their charge, but a wide gulf separates then and now. At present they are too young, raw and inexperienced to be trusted with such grave responsibilities. If they have to learn, is it necessary that human sacrifices be offered up every day in the interest of that learning? In order to complete his education and make him proficient as a surgeon, is it necessary that the young man be commissioned through the livery of the hospital and sanction of the governor to make women weep and wring their hands and children orphans?

All these sacrifices are made for the benefit of the house-staff, in order that it should be perfect and experienced. The visiting staff knows the full value of inexperience and it has not been explained why they lend themselves to those stupendous blunders and apologize for their crimes; for with the consent and sanction of the governor they permit the young doctors to proceed on their disastrous journey to success, not disastrous to themselves, mind, but to those who fall in their path.

The banker will not go home at noon and leave a junior clerk in charge of his business; the man who will be left there is one tried and true, with understanding sound and capable.

When the pulpit supply committee of a church is in search of a helper for its pastor who is overworked, it does not follow the governor's example and run after a student who wants experience by going to a theological seminary for a youth one year out of the divinity school. If it follows the governor's example in this matter and brings the divinity student to the church the congregation will quickly repudiate the choice and speedily relegate the committee to private life. The congregation must have a man who has made a reputation as a pulpit orator or in church work; it does not want him who has none, but who is no doubt eager to make one. Who ever heard of a six months' law graduate argue a case before the Supreme Court? Such a proceeding

is unknown in the annals of legal jurisprudence, but he goes into the police-court and makes himself useful as a bearer of despatches between that tribunal and the law office of his preceptor. The time will come when he will be, if he displays some ability, commissioned to plead a minor case before the civil justice or the committing magistrate, but it has not yet come, although he is a graduate of a law school one or two years. If his law firm, which means his legal guardian, his governor so to speak, sends him to Albany or to Washington to plead before either of those high tribunals it would make a grave mistake, and one for which it would have reason to regret, for he would be legally impaled on the sword thrusts of law and sarcasm hurled at him by his opponent, who is a man learned in the practice as well as the theory of his profession.

If a medical student, a few months after his graduation, now ostensibly a doctor, is competent to perform an operation of a capital kind, one probably involving the life of the patient, the science of surgery is not as difficult as we supposed and gives us some reason for thinking that the barbers and shoemakers of not so long ago, who practised it, had some justification for their temerity. Granting the correctness of these premises, the public entertains exaggerated notions of the difficulties to be surmounted in acquiring a knowledge of surgery, and it is apparent that it cannot for a moment bear any comparison with the other learned professions, law and theology, where judgment is matured by years of preparation, and where success only comes by long and arduous labor.

The governor acts very differently to the law firm and the pulpit supply committee: they are after the best material that can be obtained to aid them in the successful prosecution of their respective enterprises. The governor, on the other hand, only looks for and employs the poorest material that the medical market affords to aid his visiting staff in caring for the interests of the multitudes thronging the halls and filling the beds in the wards.

Now, when he has trained this very poor material to have some knowledge of its business, it abandons the hospital and him for itself; then, when he leaves his hospital under the care of this poor material, the very young juniors, in the absence of the visiting staff, does this visiting staff make any provision for the safety of the patients when it leaves for home after making its rounds in the wards? None whatever: it simply walks out and lets the hospital take care of itself. Who is itself? Simply three or four young fellows, graduates of six days, six months, or perhaps a year or so, and who are sadly in need of experience, and who came here to gain that experience at the expense of the patients now in their charge. Is it possible that what the public calls a great hospital is practically in charge of young men of hardly any experience worth mentioning? It is not only possible but true. Who is there to point the way for those yearlings? They need a monitor badly, but he is not there. Where is the old surgeon who left down his knife? Where is he? Echo answers where? He could give those boys counsel; tell them when not to slash. Where is the visiting staff? At home taking care of its own business. Where is the governor? At his club. Where is the superintendent? In bed. There is no head now, responsibility is divided, while people are constantly coming in maimed and sick to this hospital at the mercy of two or three inexperienced juniors.

The hospital, it appears to us, is an ideal spot and should be a paradise for those aged disciples of Esculapius who have won their spurs and now rest on their laurels, having left down the active burden of their profession. Where else now can they do so much good? Nowhere else can their services be of so much value to the cause of humanity. The old man could restrain the hand of the very young junior uplifted to lop off, to him, some offending part with the word:

"Woodman, spare this tree,
Touch not a single bough."

He could further restrain him in the amphitheater from making sacrificial offering on the altar of his temerity and inexperience to the autocrat of the hospital service—the governor. Then the lives of the maimed, crippled and unconscious people, constantly pouring into the hospital, are practically in the control of a few students—young men all. Those young doctors, two or three, or perhaps one of them is the sole judge of what should be done and what should be done quickly: he is the appellate division of the hospital court, and the lives of the unfortunates gathered by the ambulance are at the mercy of that court.

Now, we know this court to be composed of two or three young men, who entered the hospital service a few months ago to learn their business by picking up a knowledge of medicine and surgery. What kind of a decision are they likely to render in the important cases hourly brought before them? We think we can guess. True, their rulings are not all sustained by the supreme court which sits next day to hold impromptu and secret session in the staff room, but its reversal is of no avail, as the cases have passed beyond its jurisdiction.

"Died in the hospital" are words we hear ten times every day; they have long since grown monotonous. The man who sought refuge there and expected the higher treatment on entering, the very young junior recognized an injury, the second junior who diagnosed it; the third junior operated, or *vice versa*. The man died. Did he have a fair chance for his life? Did the hospital, the house of refuge to which he elected to be brought, fill its full measure of obligation to him? Did the governor do his duty, his whole duty, in the matter? Why does this governor, who holds the destinies of the hospital in the hollow of his hand, sit unconcernedly in the shade protected from the heat and prepared to resist the cold, not apply

the same business methods to the surgical and medical departments of his hospital that he does to other departments? It is because he is crafty and knows that this, the most important department of all, costs him nothing but the mere table-board, and that not very extra, of his juvenile house-staff.

Of course, the attending surgeons and physicians are obliged and help him to conduct his preparatory school for training young doctors. Any other course under existing conditions would be fatal to them. While the hospital's true mission is to make an honest and intelligent effort to heal the sick, it appears that its primary object is not this, but to instruct students at the expense of the maimed and the halt. From this it appears that the hospital exists more in the interest of the young doctor, who is hungering for more knowledge than in that of the general public, which is represented by the man who broke his leg and the woman taken with a hemorrhage. Do the philanthropists and good people who support these hospitals with their generous donations know that the governor conducts his hospital on the cheap instalment plan and under cover of the visiting staff, which is nothing but the tail of his kite, and to him as clay in the hands of a potter? Do they know that the students, or most of them, are protégés of the visiting staff by precedent and custom, and that every operation done in a hospital is done for a double purpose, not the least important of which is to instruct young doctors, called the house-staff, and, not the greatest, to benefit the patient who trusted so implicitly in its pretensions and platitudes?

The people are grievously imposed on; they suffer and die. The hospital, too, is imposed on by the connivance and machinations of the governor in order that about ten or twelve young men may become proficient in the art of surgery and medicine. Now for the sake of those ten or twelve young men, who are aspiring to be great, fifty times as many lives must be sacrificed every year—lives sacrificed in order to train twelve young men to a knowledge of surgery and, when they are trained, what do they do? Remain in hospital service in gratitude of what it has done for them? No, indeed; nothing of the kind, for they speedily say good-bye to the governor and open offices of their own in places suitable to their tastes and finances.

Experience is the one thing in business that always brings its price; the man of experience has the call and very often can dictate his own terms. The man without experience is left out in the cold, and, if employed at all, only at a small salary and in an inferior capacity. He is not given a position of trust, and will not be until he has demonstrated ability to be accounted worthy of that trust. The custom that hands over the surgical department of a hospital to three or four students for twenty-three hours out of every twenty-four is not a good one; nevertheless, it is the one now in vogue in the city of New York and in other cities, in all hospitals with the probable exception of sanitariums and private hospitals which the operating-surgeons and gynecologists had to organize and operate in self-defense against the governor.

This vicious custom, it appears, was instituted for the sole benefit of the student in medicine, and, as was said before, is adopted by all hospitals as an article of faith. It is that the house-staff, a most important body, should be composed of three or four young physicians, who have no other quality or recommendation to introduce and entitle them to public recognition except that they have no experience. No experience is the quality they count on; it is their mascot to insure success, and they are successful; they gain the confidence of the governor and are taken under his protecting wing because they have no experience.

How logical this sounds in the ears of a sensible man, but it is the logic of facts. Another fact worth noting, and probably one even more surprising than the one just related, is that the young doctors constituting the house-staff discharge themselves or are discharged from service by the governor for no other cause only that they are beginning to have some knowledge of the business they are engaged in; in other words, they are dismissed by the aforesaid intelligent system that the governor organizes and operates, because they show some efficiency and expertness in their hospital duties. Now, to discharge a man from his employment because, and for no other reason than that, he is efficient and to hire a man to take his place who brings with him no recommendation but one of incompetence and inefficiency, and who is employed because of his incompetence, is absurd and ridiculous; yet this is just what the governor has been doing for fifty years and is still doing in all hospitals and dispensaries, but as to how long he will be permitted to do so we offer no opinion.

THE TREATMENT OF TETANUS.

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IN a recent article by Thallmann some extremely interesting experiments are recorded on the possibility of tetanus infection through other portals than cutaneous wounds. It was found that guinea-pigs could not be infected through the intestinal nor urinary tracts even when ground glass was fed into the stomach or when the mucous membrane of the bladder had been injured. A healthy condition of the nose, throat and bronchi prevented an infection, but if a catarrhal inflammation of the respiratory tract was brought about a tetanus infection was easily produced by inhalation. Direct wounding of the nasal cavity also produced tetanus. The case of a man with "rheumatic" tetanus reported by Carbone and Perrero is quoted in which the tetanus

bacilli were isolated from the bronchial mucous membrane. It was also found that direct wounds of the mouth cavity could be made to cause tetanus in the same manner as direct wounds of the external skin. These experiments are striking and have lead Thallmann to conclude that in "idiopathic tetanus" the point of infection may be found in the mouth or nose; and that in "rheumatic tetanus" the respiratory tract is most probably the seat of infection.

It is often observed clinically that the severest cases of tetanus with very short incubation periods and death in one or two days occur in cases of septic, sloughing wounds in which dirt has been ground into the tissues. As was shown in my former article[1] when the tetanus infection is produced by spores, as it almost always is in man, a mixed infection seems necessary for the production of tetanus. The work of A. Schultze would seem to show that the intensity also of the tetanus infection may be increased by the absorbtion of septic material. It was found that the sterile juices of various normal organs mixed with tetanus toxin did not increase the virulence of this toxin but that the sterile extracts of decomposed organs greatly intensified the action of the same toxin. Besides under favorable conditions these septic juices mixed with a weakened tetanus toxin would give back to this toxin its original toxicity. Under certain conditions, therefore, it would seem possible for a sloughing condition of a wound to greatly intensify a tetanus infection or even to change a mild tetanic infection into a severe one. This would seem true when the tetanus bacilli remained at the point of infection and did not spread beyond but produced their toxemia from the wound. This is undoubtedly the condition that exists in the great majority of patients suffering from tetanus. There are a few cases on record in which the bacilli have been found in the body outside of the wound. Perhaps the invasion of the body by the tetanus bacilli occurs more often than has been supposed. Oettinger and Zumpe in testing some pus from a patient with tetanus noticed that one of the animals did not die of typical tetanus. They therefore made cultures of the heart's blood of 45 animals and in 20 of these mixed with the septicemia germs. Using splinters dipped in mixed cultures and dried as the method of infection, they tested the organs and heart's-blood of 45 animals and in 20 of these they obtained positive results. In the heart-blood in 28 cultures, in these 20 animals, they obtained 10 positive and 18 negative results, in 28 spleen cultures 24 were positive and but 4 negative. The bacilli were also found once each in the liver, lumbar cord, and kidneys. Experimentally, therefore, in animals under certain conditions tetanus bacilli wander out in the body beyond the lymph-glands adjacent to the wound. What the conditions are which permit this are not apparent. Cocci were found much oftener than bacilli in conjunction with the tetanus bacilli in the viscera. It may be that under certain conditions we have to deal with many more foci of tetanus bacilli than we have hitherto supposed and in some very acute cases we have many sources generating the tetanus toxin at the same time.

The constitution of the tetanus toxin is still unknown, but its effects on the cells of the central nervous system have been more thoroughly studied during the last few years. Ewing, in summing up the evidence at hand, says that "the earliest cellular lesions in tetanus consist in swelling of the chromatic bodies and cell-body and probably also of the nucleolus; that these initial changes are rapidly followed by progressive chromatolysis which may reach an extreme stage without serious alteration of the achromatic substances or nucleus; that these lesions are of rather irregular distribution, being more uniform and intense in the brain than in the cord, and with the possible exception of the early stages, the changes are not specific of the disease." Because the changes in the cells are not specific for tetanus and are not constant nor, when present, always occur in ratio to the intensity of the tetanic symptoms, it is denied by some authors that tetanus can be explained as a consequence of anatomical changes in the nerve-cells. These same authors deny that the tetanus toxin is the true poison, but believe that the toxin is changed in the body, or generates the true poison in combination with some cellular action. However this may be we know clinically that the remedies which control reflex excitability of the central nervous cells ameliorate the tetanus symptoms, and until the ultimate action of the tetanus toxin has been worked out we can hold our theoretical opinions in abeyance.

In practice the problem of treatment presented by the majority of cases of tetanus is a local septic wound and a general specific toxemia which has already damaged the cells of the central nervous system; this damage is progressing with terrible rapidity. Or in a minority of cases the wound has been so slight that it has healed, or there is no visible point of infection and we have only the tetanic involvement of the brain and cord. In dealing with the first condition we must consider both local and general treatment and in the second only the general treatment. In regions in which tetanus is common no wound is too insignificant to be carefully cleansed and kept clean until healed. When any wound is once septic and we are suspicious of tetanus infection or tetanus has developed we should use the antiseptics which will not only destroy the germs but also destroy the deadly toxins which are being absorbed from the wound. In this way we will prevent the absorption of both the tetanus toxin and the septic material which we have seen may increase the intensity of this toxin. Bichloride of mercury and five-per-cent. carbolic require several hours to kill tetanus spores. If a mixture of 1-1000 bichloride and five-per-cent. carbolic and a one-half-per-cent. hydrochloric acid is used it will kill tetanus spores in 10 min-

[1] New York Medical Journal, June, 1897.

utes. Silver nitrate solutions destroy the spores in one minute in one-per-cent. solution and in five minutes in 1-1000 solution. Bichloride will kill ordinary pyogenic germs but it is absolutely inert against the tetanus toxins.

Tetanus wounds should be thoroughly cleansed with iodine trichloride solution, 1 per cent., or Gram's, or Lugol's solutions. Carbolic acid, one-and-a-half per cent., kresol, 1 per cent., formalin, 1 to 2 per cent., are also destructive to the tetanus toxins. These solutions should be made to penetrate deeply into all recesses of the wounds and, if necessary, the wounds should be opened up freely and all dirt and accumulations removed. It may seem unnecessary to state these simple surgical details, but in the last few years the writer has been struck with the number of tetanus cases developing from injuries with blank cartridge pistol wounds. When the patients were brought to the hospital and the wounds opened the wads of the cartridges have been found at the bottom embedded in dirty, sloughing tissue. These wounds had previously been treated by some one who considered bichloride washing and a gauze drain sufficient treatment. The death of the patients from tetanus is sufficient proof of the utter worthlessness of such treatment. In sloughing tissues the toxin-destroying antiseptics should be injected into the tissue with a hypodermic syringe. In small punctured wounds of the hands and feet the wound should be cut out. In wounds in which dirt has been ground in, amputation should be considered. It is better to live without a finger or toe or even a limb than to run the risk of an acute attack of tetanus. In such wounds as these the preventive inoculations of tetanus antitoxin should be considered, as will be mentioned later.

In the general treatment of tetanus we have three indications to follow: (1) The speedy elimination of the poison. (2) The administration of physiological antidotes to counteract the poison on the body-cells. (3) Chemical antidotes which change the poison by destroying it or by rendering it inert, and thus prevent, retard or arrest its action. To fulfil the first indication we must increase the action of the kidneys as the tetanus toxin is eliminated by them. The thirst of tetanus patients is usually excessive; it is best, therefore, to give them an abundance of water or milk if they are able to swallow. Sahli reports that in one of his patients he used with advantage subcutaneous and intravenous injections of salt solution.

The best physiological antidote is chloral as it diminishes the intense reflex excitability of the central nervous system. Bromides, physostigmine, and antimony act in analogous way. The intense chronic convulsions and the sudden spasms of the glottis and respiratory muscles are the features to be dreaded in tetanus. They exhaust the patient or cause sudden death from suffocation. The writer has seen several tetanus patients, who were doing well and improving, wake from a sound sleep and die in a sudden spasm of the respiratory muscles. Amyl nitrite should be kept constantly at the bedside and if such a spasm occurs a drop of two should be applied to the nasal mucous membrane. Several cases are reported in which this treatment relaxed the spasm. Morphine has a valuable action of its own; it produces sleep and relieves the pain of the convulsive seizures, two indispensable ends to be obtained. Antimony should be given combined with morphine, each an eighth or six of a grain every two hours. This combination controls the spasm and may be continued for two or three days without bad effects. Controlling the spasms with anesthetics is not recommended as their use is not without danger. Sahli emphasizes the wisdom of alternating these remedies and not giving them in stated doses at regular intervals. If this is not done a tolerance is established and one is in danger of giving too much or too little. A full dose should be given, thirty grams of chloral and forty grams of bromides, or a sixth of a grain of morphine. The convulsions are the best criterion for judging whether narcotics should be increased or diminished. When improvement begins the tetanic spasm usually relaxes simultaneously with the cessation in frequency of the convulsions.

Have we any chemical antidotes which, circulating in the blood, will render inert or arrest the action of the tetanus poison? The antitoxic antiseptics, such as kresol, carbolic acid and iodine, cannot be safely injected into the body in sufficiently large doses to destroy the tetanus toxin. Baecelli reports several cures following the subcutaneous injections of one-per-cent. solutions of carbolic acid. This treatment may have some effect, but the toxic action of carbolic acid is certainly to be feared. That the antitoxic serum is such a chemical antidote we have an abundance of proof.

We are able to calculate accurately the amount necessary to render inert the action of any given known dose of tetanus toxin. This is true whether we mix together the toxin and antitoxin before injection, or whether we inject first toxin or antitoxin. But because of the particular action of toxin we cannot allow too long a period to elapse after its injection before we inject the antitoxin. The length of time elapsed between the injection of toxin and antitoxin has a very important bearing on the treatment of tetanus because while but a minute amount may be sufficient to prevent the toxic action, if injected simultaneously, as time goes on, it may take a thousand or ten or a hundred thousand times as much antitoxin to arrest the toxic action. In the former article referred to the writer expressed the opinion that toxin and antitoxin had no direct action on each other. This opinion is still held by some investigators, but the weight of evidence at present all points to some direct chemical action between them. Erhlich considers the combination some such action as occurs between double salts.

The method by which antitoxin acts against

the toxin in the body is still a mooted question. One's opinion will vary according to the theory of general immunity in which one believes. But it is immaterial as far as the practical application goes whether we believe that the antitoxin does not act directly on the toxin, but by its action on certain cells arrests or prevents the action of the toxin; or that the phagocytic leucocytes are the main defense of the organization against toxins as well as bacteria, or that the action is a purely chemical one and the antitoxin combining directly with the toxin produces an inert substance. If the toxin is already combined with some "side chain" of the "central group" of the cell protoplasm the antitoxin has the power to dislodge this toxin, if it is not too closely combined or has not firmly entered into the "central group" itself. Experimentally, we know by the work of Donitz, Knoor, and Tavel, that even after tetanus has developed animals can be saved, that is, cured of the disease, by the injection of antitoxin.

To judge the results of any treatment we must compare statistics of any disease before this treatment was used with the statistics after its use. The death-rate of tetanus is variously given in acute cases from 78 to 96.6 per cent.; in chronic cases from 17.8 to 55 per cent. The average for all cases varies from 21 to 87.5 per cent. Cases reported in literature are usually reported because of some peculiarity connected with the course or origin of the disease. Hence, cases of acute tetanus that recovered would be reported because it was unusual for them to recover and cases that died would not be reported. Hospital statistics, therefore, which simply record the disease and its results will give a fairer estimate of the true mortality of the disease. Behring reports the statistics of 716 such cases with a mortality of 88 per cent. I have previously reported 1222 war cases with a mortality of 88.6 per cent. and 280 cases occurring in time of peace with 76 per cent. mortality, but these last cases seem to be open to the same doubt as expressed above. My own personal experience with 35 cases, acute and chronic, in the hospitals of New York City gives a mortality of 83 per cent. in time of peace. The fairest estimate seems to be for acute cases at least 88 per cent., and for the subacute and chronic cases 40 per cent.

The prognosis of tetanus is in direct ratio to the shortness of the incubation period and to the rapidity and intensity of the development of the symptoms. In judging of the results of antitoxin we must, therefore, divide the cases into acute, *i.e.*, all those with an incubation period of less than ten days or with a longer incubation but with very acute onset and those with an unknown incubation but with an acute course; and chronic, *i.e.*, with more than ten days' incubation or with a less than ten-day incubation but with a slow, moderate onset of symptoms and those with an unknown incubation and mild course. The following cases of tetanus treated with antitoxin comprise published and unpublished cases. We have a total of 279 cases with a mortality of 44.08 per cent., but of these we must rule out 17 cases, 4 deaths from intercurrent diseases, 8 deaths in cases in which the antitoxin was given but a few hours before death, and 5 recoveries in which antitoxin was not given until after the twelfth day, as they probably would have recovered without it. We have left 262 cases with 151 recoveries and 111 deaths, a mortality of 42.36 per cent. Dividing the cases into acute and chronic we have 124 acute cases with 35 recoveries and 89 deaths, a mortality of 71.77 per cent. and 138 chronic cases with 116 recoveries and 22 deaths, a mortality of 15.94 per cent. In interpreting critically these statistics we see that in acute cases the mortality is but slightly reduced, being but 72 per cent. instead of 88 per cent. But in the less acute cases there is a decided improvement from 40 per cent. to 16 per cent. Taking the statistics as a whole there is a distinct improvement in the mortality of tetanus since the introduction of antitoxin.

In the laboratory, experimenting with small animals, Knorr and Donitz have shown that the difficulty of the cure of an animal suffering from tetanus is in proportion to the intensity of the infection and the length of time elapsed before the injection of the serum. The results of treatment in man seem to accord with these experiments. In very acute cases in which the intensity of the infection is shown by the short incubation period and violent course of the symptoms, the patient is beyond our aid. As Heckel and Reynes express it, acute tetanus is in reality the end of an infection that has run through most of its numerous stages. From the moment we see slight trismus it is not the beginning of the disease; it is the beginning of death. It, therefore, seems fair to say that in acute tetanus the chances are against recovery no matter what is the line of treatment pursued. With large doses of antitoxin given intravenously to insure its rapid dissemination the chances of recovery are better than without antitoxin. In subacute or chronic cases the chances are decidedly in favor of recovery if antitoxin is used. If antitoxin is not used the chances for and against recovery are about even.

The above statistics are taken from cases in which the antitoxin has been used intravenously or subcutaneously. During the past two years a new method of treatment recommended by Roux and Borrel has been in vogue, that of the intracerebral injection of the tetanus antitoxin. Roux and Borrel found that by injecting the toxin directly into the brain-substances a peculiar kind of tetanus was caused. Instead of the tetanic spasm and convulsion there were psychic phenomena of seeming hallucinations with fear and a furious unrest, polyuria and violent convulsions, the animals died in these or became emaciated with crises of convulsions and died later. They found that animals actively or passively immune to tetanus would take cerebral tetanus if the toxin was injected directly into the brain-tissue. If the toxin were injected subcutaneous-

ly and the tetanic symptoms allowed to develop the majority of animals could be saved by an intracerebral injection of antitoxin. They believe that the tetanus toxin, when once in the blood, is quickly withdrawn to become fixed in the nerve-cells; while the antitoxin remains in the blood and cannot act on the toxin, unless a combination occurs in the blood. The poison is diffused from nerve-cell to nerve-cell out of reach of the antidote. The antidote should, therefore, be placed where it can act. "The antitoxin carried into the brain protects the upper portion of the spinal cord although the inferior portion of the cord is already attacked by the poison, but it will not undo the damage done; the contractures established at the moment of intervention persist for a long time. Besides, the intracerebral injections do not save all tetanic animals; if the upper portions of the cord are poisoned, death will not be prevented. There is a time after which antitoxin can do nothing, whatever the method of its employment. The intracerebral injections increase the period of efficacious intervention." These authors also express some doubt as to whether an animal whose tetanus was bulbar from the beginning would be better cured by intracerebral than by subcutaneous injections. Fonseca, repeating this work on rabbits, found intracerebral injections useless in acute tetenus. Blumenthal and Jacob performed intracerebral injections in goats as soon as tetanus symptoms appeared but without effect.

The writer has been able to collect the records of 52 cases of tetanus in which intracerebral injection has been performed. In these 52 cases there are 19 recoveries and 33 deaths, a mortality of 63.46 per cent. Dividing them into acute and chronic cases, we have acute, 3 recoveries and 21 deaths, a mortality of 87.5 per cent., and chronic, 11 recoveries and 4 deaths, a mortality of 26.66 per cent. There are 13 cases with insufficient data to classify them, 5 recoveries and 8 deaths. Besides the above, in one chronic case subdural injections were made and were followed by recovery and in 2 acute cases which died. When we consider that in the majority of these cases intravenous and subcutaneous injections of antitoxin were also made and compare these statistics with those without intracerebral injections, we are not favorably impressed with this new method. Borrel claims that after the first twenty-four hours of tetanic symptoms intracerebral injections are useless and that they are also useless when the pulse is above 110 or the respirations above 25, or if dysphagia or paroxysms of suffocation are present, and in cephalic and abdaminal tetanus. But as Roux and Borrel have shown that if even in small animals the superior portion of the cord is affected the animal cannot be saved, and as Ewing has shown that the brain and medulla in man are most affected, and clinically in human tetanus the first symptoms are usually those of bulbar involvement, we do not see any encouragement to continue intracerebral injections.

We must realize that in acute tetanus the chances are against recovery; hence, in all severe wounds in regions where tetanus is not uncommon we must consider the preventive inoculations of antitoxin. As was previously reported by me, Bazy in France, after having four fatal cases of tetanus in one year, has made it a practice to inject ten cubic centimeters of serum into all patients who have come under his care with wounds which caused him to fear tetanus. He did not see a case of tetanus again, although his practice has been in a region notorious for tetanus. He has since reported that in one man in whom the inoculations were accidentally omitted tetanus did develop. The results of Nocard's method of preventive inoculations in veterinary practice are most striking. Among 63 veterinarians there have been inoculated *2727* animals with preventive doses of antitoxin and not a single case of tetanus developed; while during the same period in the same neighborhoods 259 cases of tetanus developed in non-inoculated animals.

There is no doubt in the writer's mind that many cases of human tetanus could be avoided if these preventive doses of 10 cc. of antitoxic serum were more generally used. Behring recommends very strongly that the antitoxin should be given not later than thirty hours after the first symptom, and that 100 units be given at once. His 100 units mean 10 cc. of his serum. He has a certain standard toxin which he uses and which remains constant. One unit is the amount of serum necessary to protect without symptoms 4,500,000 grams of living mouse against this standard toxin. The French method of Roux is to calculate how many grams of test-animal will be protected against a 4-5 day fatal dose of toxin. It is then stated to be one to so many millions. Nocard says that the Pasteur Institute serum and Behring's serum are the same strength. The New York Health Department has always used Roux's method in estimating the strength of the serum and in the circular accompanying the serum the strength is given. In using the serum in man intravenous injections will act much more surely and quickly, and should be given when possible; 20 cc. to 50 cc. should be given as the first dose, followed twelve hours later by 20 cc. more. Ten to 20 cc. should be given every twelve to twenty-four hours later till the spasms cease. In children half the dose should be given. The local and physiological remedies should never be omitted, for it is only by employing every means in one's power that we can hope to overcome the terrible virulence of the tetanus toxin.

THE IMMUNIZING CURE OF HAY-FEVER.

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SOME two years ago I reported to the Section on Laryngology of the New York Academy of

[1] Abstract of paper read before the Section on Laryngology and Otology of the American Medical Association at Atlantic City, N. J., June 7, 1900.

Medicine the result of some experiments I had been making upon a patient, who from childhood had suffered from violent attacks of neurotic coryza, with most severe constitutional complications during the paroxysm. These attacks, simulating the most severe type of an attack of hay-fever combined with an energetic spasmodic asthma, completely prostrated the patient and usually lasted for about two weeks. The patient, who was an unmarried woman of thirty-five, frequently presented this picture; the finger-nails would become cyanosed, the extremities cold, and a state of collapse supervened which required the most rigorous measures to sustain life. These attacks were brought about by any exposure to the perfume of flowers, and so susceptible was the lady to these odors that to pass a florist's shop in the street would be sufficient cause to produce a paroxysm. It was upon this patient, who was from one of the best-known families of St. Louis, that I determined to try the effect of immunizing the patient by giving internally the watery extract of certain flowers and their pollen, as well as in small doses by hypodermic injection. I consequently commenced by giving the sterilized infusion of roses, and after two weeks found that the patient could tolerate that flower in her bedroom. I then successively tried the violet and lily-of-the-valley, and was equally successful with both flowers. After I had immunized her to three flowers, it was found that adding others to the bouquet always kept at her bedside, did not produce any bad effect, and since then there has been no recurrence of the paroxysms that heretofore rendered her life unendurable. This patient, however, was of so pronounced a neurasthenic type, besides being tuberculous, that I made a very guarded report of the case before the Laryngological Section of the Academy at that time, preferring to wait for more experience with other cases before communicating further upon the subject.

Another patient once told me that it was impossible for her to go into the ipecac department of a drug store where she was employed, without getting a violent "crying cold with asthma," and she informed me that when she worked in ipecac, she had to take some tincture or syrup in drop-doses for several days before she came into contact with the drug; a precaution which she found always prevented an attack. This young woman informed me that a friend of hers was likewise affected and also benefited by the same precaution. It was the remembrance of this case that originally suggested to me the possibility of an immunizing treatment for hay-fever. A point of especial importance is the curious fact that not only is immunity from attack secured by this mode of treatment, but also, after the attack of pollen-fever or flower-fever has occurred, and the paroxysm is at its height, the attack is at once lessened and ofttimes controlled by the exhibition of the causative drug. I have found this to be the case with golden rod and lily-of-the-valley and also in rag-weed coryza. A Philadelphia physician, who is affected with a violent coryza produced by the odor of salicylic acid, has recently told me that this disturbance does not occur while taking the salicylate of sodium. The experiences just narrated prompted me last summer to obtain through a drug firm the services of a botanist to secure the flowers and pollen of enough rag-weed to make an experiment on a large scale this year upon so-called hay-fever, and determine whether the hypothetical deductions from the experiments I have already conducted are truly as great a discovery as I anticipate. The tincture and fluid extract are the solutions most available, and in my recent experiments I have discontinued the use of hypodermic medication.

The drugs were delivered to me by Fraser so late in August of last year that the preventive treatment could not be carried out, but in no case of some eight or ten, in which I tried the treatment at the commencement of the attack, was there anything but remarkable results, even when the enemy had been in full control for two weeks. Permit me to append a letter from a Brooklyn clergyman, which is a good sample of the general estimation in which the drug is held by some of the worst cases on record.

GRACE CHURCH, UTICA, N. Y.,
December 12, 1899.

MY DEAR DR. CURTIS:—Before I left Brooklyn I wanted to write and tell you how deeply I am indebted to you for the relief which you gave me from hay-fever during the past summer and autumn, but the rush of moving prevented my doing so. However, you must listen to my refrain and it may interest you.

In August, 1889, I had my first attack of hay-fever when I was living in Wethersfield, Conn., from which place I removed to Brooklyn at the close of the month just mentioned. Regularly every year since on August 19th, except in 1894 when it came on August 21st, the hay-fever appeared. In three days my eyes would be so inflamed and bloodshot that a few minutes with the newspaper was as much reading as I could do; my nose became swollen and the edges of the nostrils had to be rubbed with salve after the paroxysms of sneezing to prevent them from cracking open. At least one-half of the time I could not breathe through either nostril and panted with open mouth like a dog; in bed at night I had to prop myself up with pillows to catch any sleep at all; I had no appetite; no anything. This condition would last into October, taper off in November, gradually disappearing after the arrival of the killing frosts.

My attack this year had been running for several days before I received your medicine from Fraser, and I was astonished at the abatement of the enemy in forty-eight hours. You know the rest of the story: good appetite, sleep at night, and only enough of a touch of hay-fever for me to know that I was prone to the attack of the fiend.

Perhaps you will now understand why I consider myself to be,

Most gratefully and sincerely yours,

B————.

In my caption I speak of hay-fever in its popular sense, but the malady to which the treatment I have suggested applies is rag-weed corasthma.

I have several cases on record of golden rod and lily-of-the-valley corasthma which have been cured by the Solidago odora and Convallaria majalis in three or four days, but while these are interesting as contributive evidence, the old enemy rag-weed is the recognized king of pollens, whose term of office begins on the 12th to the 20th of August, in these latitudes, and whose cruel reign is only ended by the first frost.

If my theory that this rhinitis *vaso-motor periodica* or *corasthma ambrosiæ* may be prevented by giving from two to ten drops of the tincture or fluid extract of ambrosiæ arterisiæfolia t. i. d. in water p. c. during the two weeks preceding the paroxysm, is correct, I will consider that I have heralded with becoming modesty what I believe to be a great discovery. If, on the other hand, the results I have obtained are not verified by others, I may only say that greater men and more scientific observers have been misled by initial results that time did not substantiate. I would be pleased, however, to give to any physician who will conscientiously aid me in investigating the subject such directions that he may experiment for himself upon severe cases, in order that a collection of reports from disinterested physicians in widely separated localities may be of benefit to the cause of scientific research.

118 Madison Avenue.

SIGNIFICANCE OF THE STOOL IN INFANTILE DIARRHEAS.[1]

By WM. EDGAR DARNALL, M.D.,

OF ATLANTIC CITY, N. J.;

VISITING PHYSICIAN TO THE ATLANTIC CITY HOSPITAL; FELLOW OF THE AMERICAN ACADEMY OF MEDICINE; MEMBER OF THE AMERICAN MEDICAL ASSOCIATION; AND VICE-PRESIDENT OF THE ACADEMY OF MEDICINE OF ATLANTIC CITY.

The most important feature in treating the summer complaints of infancy is a systematic and careful examination of the napkins day by day. The clinical symptoms furnish a general idea, but the stool is an actual index of the conditions present. Appearance, consistency, and number of movements per day are to be considered. The verbal descriptions of an anxious mother are not to be depended upon. She will say yes to almost any direct question. Her very lack of scientific training precludes her knowing about the details of consistency, color, particles of fat or casein, mucus, pus, necrosed epithelium, blood, etc.

Usually there is a history of the baby becoming cross, peevish, losing its appetite and vivacity, and vomiting its food. The stools increase in frequency, are thinner in consistency, unnatural in appearance. Here is a condition of indigestion. The well-meaning mother, every time it cries, gives it more food. The difficulty is thus increased. The baby becomes worse. Movements become as thin as water, yellowish or muddy brown, offensive, perhaps accompanied with much flatus. They soon become colorless and watery. Weight is lost rapidly. The life of the little one leaks away literally through its bowels, unless this leaking is promptly controlled.

The dirty lead-colored stool is enough to tell the tale of infected masses of imperfectly digested food. Profound impression is made upon the nervous centers by the absorption of toxins from the bowel. The little patient wilts like a plucked flower, unless promptly cared for.

Most common, perhaps, is that terror of mothers, the green stool. Acid in reaction, accompanied with colic, it indicates too great a percentage of carbohydrates in the food. The passage resembles masses of finely-chopped spinach or parsley intermingled with proteids of undigested casein or fat. Most to be dreaded is the watery movement, with here and there a small speck or mass of light pea-green matter. It is little less dangerous than if it were so much arsenic. It is often seen in the latter stages of marasmus, when the natural secretions are so altered as to be unable to combat it.

Mucus is always present in the feces. It is not visible except when in abnormal quantities. When present, therefore, it indicates an inflammatory condition of some portion of the alimentary tract. If in the small intestine high up, it probably will be bile-stained. If in the colon or rectum it will be, as a rule, composed of white, jelly-like masses of mucus, and attended with pain and tenesmus similar to the dysentery of adults. If it has continued for any length of time, shreds of necrosed epithelium may be found coming away in perfect strings.

Another not uncommon condition is seen in the whitish or grayish-white stools of putty-like consistency. The appearance is often very much like cigar ashes. Fischer states that these stools are composed largely of undigested fat. At any rate there seems to be a total inactivity of the liver function, since often no trace of bile is found in the excretions.

The constipated stool may be mentioned in passing. They are usually dry, pasty and lumpy and the result mainly of an insufficient quantity of fat in the food.

Hygiene is too large a subject to be discussed here in detail, except to say in passing that it is of vital importance, and too much care cannot be given to bottles, napkins, bathing and dress.

Excluding constitutional diatheses, the treatment of the bowel conditions of infancy may be summed up in three words, *viz:* (1) Elimination, (2) disinfection, (3) feeding; using always as few drugs as possible.

[1] Author's abstract of paper read before the Section on Diseases of Children of the American Medical Association, Atlantic City, N. J., June 5-8, 1900.

Let it be remembered that the starting-point of all these troubles is indigestion with retention and decomposition of food in the alimentary tract, which causes autointoxication by the absorption of toxins from the bowel. The first step, therefore, is to stop all food for a day or two, using barley-water or plain sterile water for its thirst. Then rid the bowel of all offending matter by dram-doses of equal parts of castor oil and aromatic syrup of rhubarb. Antiseptic action may then be obtained by tenths of calomel and quarter-grain doses of salol, which may be combined with bismuth for its sedative effect. If the stools are serous, grain-doses of Dover's powder after each loose movement should be used. For a condition of great relaxation, stimulation with small doses of brandy may be employed, or morphine, gr. $^1/_{100}$, and atropine, $^1/_{500}$ to $^1/_{800}$. In all conditions of abdominal pain, hot applications over the abdomen are of service. Should mucus be present, large doses of bismuth should be given with the addition of aromatic powder, or a little oil of anise, which by its carminative action helps to expel the flatus. Simple medication is all that is necessary for most children. Some children, however, seem to resist all efforts to tax the attendant to the utmost for expedients. In such cases a daily high irrigation of normal salt solution or warm water may be employed. It is of especial service in clearing out from the bowel mucus, foreign matter or any focus of infection, besides being soothing and comforting to the little sufferer.

The hardest question to settle, perhaps, in the management of a sick infant, is the adjustment of a suitable diet. None of the proprietary foods are quite satisfactory or efficient without the addition of fresh cow's milk, except for a very short time. If they are to be used, only experience and good judgment in their selection can determine which food will suit the individual case. Often one food after another may have to be tried, until the whole gamut is run and the right one found. The most satisfactory, as well as the most scientific way of meeting the difficulty, beyond a doubt is the modification of fresh cow's milk. It may be Pasteurized to decrease the risk of infection. The sick baby should be started on a low percentage of proteids and fats, which may be gradually increased if the digestion can stand it. One-half to one per cent. of the proteids may be ordered for a child from six months to one year of age. In some cases even with such low percentage, it is necessary to peptonize the milk for the delicate stomach of the weakling. The proteids should be gradually increased by easy stages, and the movements jealously watched for the presence of curds or masses of fat, and on their first appearance the percentages should be again decreased. While every one cannot afford, on account of the expense, to have the milk scientifically adjusted by the milk-laboratories, yet any progressive physician who will take the trouble can work out his own percentages and so instruct the mother that she may approximate them in the home modification of the milk. This becomes especially easy by means of the Estraus Materna introduced by Dr. Holt, which is a simple and convenient device within the reach of every one. It is an octagonal glass receptacle, holding sixteen ounces, and so graduated on its various sides that if the markings are followed six different sets of percentages of modification may be produced and that suited to the case selected.

The treatment of infants requires infinite care as to details and patience, while the closest scrutiny of its small body in all of its physical appearances, and an observation of its motions, facial expression and even its cry are requisite. These are its only mode of expressing its sensations, and a correct interpretation of them often sheds light on a proper understanding of its condition.

CLINICAL MEMORANDUM.

EXSTROPHY OF THE BLADDER COMBINED WITH EPISPADIAS.[1]

BY W. B. YOUNG, A.M., M.D.,
OF BON AIR, TENN.

ABOUT the middle of March, 1900, I was called to see some cases of measles in the family of Mr. E., who had only a short time previous to my visit moved into our town. The father informed me that one of the children, a little boy three years and seven months of age, who was then well broken out with measles, had a "deformity of his privates." From a superficial examination I first supposed I had a case of hermaphrodism. After the child recovered from the measles, with the consent of the father, I chloroformed him, assisted by Dr. H. L. Fancher, in

Fig. 1.

Exstrophy of the Bladder Combined With Epispadias.

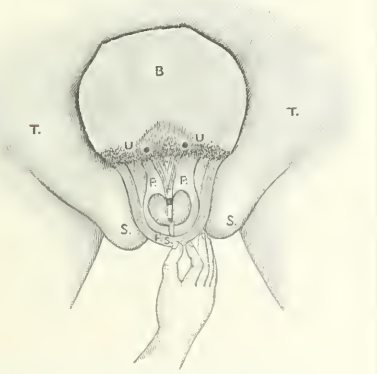
order to make a thorough examination of the parts. We found a scrotum with no testicles in it, but further search located them in the groin. There was a mere rudimentary penis, hardly half an inch in length, which had no urethra. In its place there was a faintly marked fibrinous line indicating where the urethra, or groove, in true epispadias, should have been. The penis

[1] Read before the Upper Cumberland Medical Society, May 1, 1900.

was flat on its upper surface with only a partially-developed gland, an excessively large frenum, and a redundant foreskin on the under side of the glans. This rudimentary organ looked very much like the condition one would have if one were to split half-in-two a solid penis and remove the upper half. Just above this organ protruded a very red and angry-looking tumor, somewhat conical in shape, one and one-half inches in diameter at its base. This tumor was turned outward, and on lifting it up, thereby putting its attachments on the stretch, we could discern that it was attached all around to the skin. Lifting the mass upward in the direction of the umbilicus, exposed to view two small openings about one-fourth of an inch apart (ureteral orifices) which were situated on top of the root or beginning of the rudimentary penis. This tumor proved to be the inverted bladder.

From the above description it can be seen there

Fig. 2.



Bladder Lifted Up in Direction of Umbilicus to Show Ureteral Orifices. *B*, Mucous Membrane of the Posterior Bladder-Wall; *U*, Uteral Orifices; *T*, Testicles; *P*, Penis Drawn Down; *S*, Scrotum; *F. L*, Fibrinous Line; *F. S*, Foreskin.

was a want of skin, cellular tissue, etc., over a space the shape and size of a silver half-dollar, where the mons veneris should be, out of which aperture the inverted bladder protruded. The anterior wall of the bladder was absent, and all there was for a bladder when replaced was a muscular pouch or cul-de-sac lined with mucous membrane, the shape of which would remind one of an old fashioned bullet-ladle.

The urine, of course, discharged around the root of the penis (not on top of it as in complete true epispadias) and flowed over the redundant foreskin and down over the scrotum, producing a constant dribbling. The urine thus flowing over the genitals has never caused excoriation or irritation of any kind. This condition of affairs existed from the birth of the child without any attempt at relief. I was the first physician to examine the case, a midwife having delivered the mother, and no physician ever saw the child afterward until I was called in to see the little fellow suffering from measles. The child's health from birth has been good, and it seems to be well developed in every way save for this malformation. The bladder was never inverted until the child was two and one-half years old. It does not now become inverted except when the child cries or coughs severely. After the crying or coughing ceases the bladder returns. One peculiarity about this malformation is that it never gives rise to pain or becomes sore. The manipulation of the bladder when inverted always produces vesical and often rectal tenesmus.

This is an exceedingly rare malformation There have been many theories advanced as to the etiology. The most plausible of these is the one given by Reichel, who thinks that exstrophy and epispadias are due "to an arrest in development occurring in the first weeks of fetal life, and are the results of disturbance in the formation of the primative streak, *i. e.*, coalescence of the borders of the primitive groove does not take place or is defective."

The treatment consists in wearing a urinal, or the performance of a surgical operation for the purpose of relieving the epispadias by making an artificial urethra, and to cover over the bladder by bringing the abdominal walls and skin together. The measure of success by all methods of operating for the cure of this malformation is not very great; however, it is the unanimous opinion of all the best surgeons that in such cases an operation should be attempted. In the above-described case the father of the child absolutely refuses to allow any "cutting operation" to be performed.

MEDICAL PROGRESS.

The Treatment of Typhoid Fever.—The indications for promoting intestinal asepsis in typhoid fever are best met, according to the views of D. E. English (*Med. Rec.*, June 30, 1900), by the use of a combination of camphor and carbolic acid. One ounce of carbolic acid crystals are mixed with three ounces of camphor gum and the result will be a smooth, transparent, oily liquid, almost colorless but later becoming pinkish. If there is always a slight excess of camphor the liquid will not be irritating and will keep indefinitely if tightly corked. It may be given by dropping the dose in a capsule just before using, as it will dissolve the capsule in a short time. Ten drops may be given every three or four hours, but smaller doses are usually sufficient and efficacious. The urine should be watched for carbolic acid poisoning, although this rarely occurs. It is believed to have a direct action upon the germs within the gut and prevents the absorption of the toxins. An immediate fall of temperature may be expected, and it seldom needs other remedies after three days of this treatment.

The bowels should be kept open, and large quantities of water drunk. The carbolated camphor generally prevents tympanites, but turpentine internally and in the stupes may be required. For the first two weeks the author relies entirely on dissolved meat as a food.

℞ Acidi hydrochlorici c. p.....5i
Aq. distillati ad.....5i

One teaspoonful of this acid is added to a pint of water and a pinch of salt placed in a quart jar. One pound of finely-chopped beef is added, shaken well, and allowed to stand twelve hours. It is then kept warm, not hot, for four or five hours and the juice strained off. This essence is seasoned and given in one-ounce doses every hour for the first week and in larger doses afterward. Milk is given during the third and fourth weeks, and a gradual and careful return to solid food made.

Intermittent Fibroid Polyp of the Rectum.—Péraire (*Revue de Chirurgie*, June, 1900) narrates the case of a woman, aged thirty-eight years, who, one year previous to his seeing her, had been troubled with what she thought to be hemorrhoids, which occasionally bled at stool and once came down outside of the anus, the mass being as large as the end of one's thumb. For some time no other symptom except constipation and abdominal pain were felt, until at the time of the birth of a child a mass, the size of an egg, was expelled from the rectum. No attention was paid to this tumor (which was now external to the anus) until about three months after her confinement, when she sought medical advice because of the weight of the mass, the pain caused by dragging, and the inconvenience of sitting down properly. On examination he found a rose-colored, pyriform, hard, non-fluctuating, pedunculated tumor, the size of an orange, hanging from the rectum and resting upon the buttocks. The pedicle was made up of large vessels, which, after having been tied off, permitted of easy removal of the mass from the pedicle by incision and application of the thermocautery to the stump of the pedicle, and the patient made an uninterrupted recovery, operation having been done under cocaine. Histological examination proved the tumor to be a fibroma composed of concentric fibrous tissue, with absence of glandular tissue. This finding corresponds with the researches of others, *viz.*, in adults, in whom polyps are rare, the structure is fibrous, while in children in whom polyps are more frequent, the structure is mucous. There are several varieties of rectal polyp: (*a*) Mucous; (*b*) fleshy, *e. g.*, sarcoma; (*c*) follicular; (*d*) fibroid, the last to be distinguished from all others by its consistency, being hard, and resembling uterine tissue. The size of polyps varies from that of an almond to that of a cocoanut. Location may be above or below the sphincter ani. Pedicle may be long or short, thick or thin, depending largely on size of tumor; the greater the tumor the greater the weight, hence, by traction, mechanically the pedicle is lengthened. Pedicle contains arteries, veins, lymphatics and nerves. Vascular supply of tumor is copious, hence the vessels of pedicle are often easily made out by touch. Symptoms, at first none; later a sensation of weight or fulness about rectum; tenesmus and pain at stool; finally, bloody stools; occasionally the shape of fecal mass may be altered, having depressions or grooves; this is rare; stools are eventually more likely to be soft owing to mechanical breaking up caused by tumor obstructing lumen of gut; occasionally there is an acrid discharge from rectum resembling a diarrhea; profound anemia and its concomitants may result from hemorrhage. The physical signs differ according to location of polyp; if below sphincter, they are easily seen; if above, errors of diagnosis are possible; palpation, digital and instrumental, and rectal examination are often necessary. Digital examination reveals fleshy mass of firm consistence, attached by a pedicle (long or short) to rectal wall—usually the posterior wall—generally five to six centimeters from anus; if above sphincter ani instrumental and digital examination necessary; instrumentation gives us correct idea as to form, volume, and consistence. If polyp is above reach of speculum bimanual palpation is then necessary, as sometimes the polyp is higher up in abdominal cavity. These polyps occasionally atrophy spontaneously, and may be even expelled spontaneously owing to rupture of pedicle; rarely death may occur from excessive hemorrhage from ruptured pedicle-stump. Occasionally mucous membrane of rectum may be prolapsed owing to traction exerted by weight of polyp. The diagnosis may be confounded with (*a*) hemorrhoids; not likely to mistake it for external hemorrhoids, but may for internal; but these have annular conformation; are not usually pedunculated, and are not hard and firm as are polyps, yet polyps may occur with hemorrhoids; very rare. (*b*) Prolapse of rectum, examination here will reveal the circular mass, non-pedunculated, and having somewhere an opening (lumen of the gut) through which one's fingers may pass. (*c*) Cancer of rectum; scarcely possible to mistake this owing to gravity of physical and physiological symptoms which cancer generally gives. (*d*) Venereal vegetations; these are usually multiple, about margin of anus, small in size, more frequent in women. Prognosis is good, provided tumor easily reached and early operated upon; if constitution be not already too profoundly altered by previous hemorrhage; prognosis more grave in children than in adults. Treatment consists in the removal of polyp (except in cases in which profound anemia or advanced age contraindicate) by isolating and ligating the large vessels of pedicle; then cutting through the pedicle, after having dissected off a flap of mucous membrane with which to cover over by suture the stump of the pedicle. This treatment presupposes that the polyp is or can be brought external to the anus; if, however, polyp is high up, it will be necessary to do a celiotomy, as done by

Westermark. Or one may, when possible, force one's hand (holding scissors or snare) up into rectum; seize the pedicle and cut it *in situ;* this, however, is not generally feasible and is dangerous. Or, if the tumor be in rectum in sacral excavation, one may do a Kraske operation.

The Treatment of Exudative Peritonitis.—A. A. Berg of New York (*Medical Record,* June 30) claims: (1) That bacteria alone, except in large numbers, do not produce exudative peritonitis; even pyogenic bacteria are harmless if not mixed with caustic or irritating substances: but if non-pyogenic bacteria be introduced into the peritoneal cavity causing considerable decomposition of albumin, general sepsis but not purulent peritonitis results. (2) Immunity on the part of the healthy peritoneum is due to its rapid resorptive power which is lessened by chemical agents causing the death of cells or by mechanical agents, such as gauze and tubes, and increased by increased peristalsis of intestines. (3) That resorption (which occurs even in diseased peritoneum) is mainly by way of the blood-vessels. (4) That peritoneal resorption is an active cellular process and not a passive one; the greater the disease the greater the interference with this activity, being least when the peritoneal endothelium has been considerably altered and ceasing when these peritoneal cells are destroyed. (5) Anything interfering with the normal cellular activity of the peritoneal cells favors a sedimentation of the bacteria, with their consequent further growth and development; such factors may be gauze-drainage, tubes, and excessive handling of the intestines. (6) It is irrational to base our estimate of a peritonitis on the character of an exudate. (7) Severity of cases depends on the degree of intoxication (poisoning) from absorption into the system of the toxins produced by the bacteria. Some cases (fatal usually) show absolutely no signs either micro- or macroscopically of a peritonitis. (8) Toxemia and bacteriemia in septic cases are due sometimes not only to the above but to resorption by intestinal mucosa of the toxins and bacteria which are present in the intestinal canal. (9) The chief excretory channels are the kidneys. Bearing in mind these dicta one has the key to treatment, as follows: (*a*) *Frequent* infusion into circulation, subcutaneously, intravenously or per rectum, of small quantities of hot normal salt solution (about 100 gm. every hour). (*b*) Nourishing diet and stimulation when necessary. (*c*) Free catharsis when distention is present; if distention is not present, wait three or four days. (*d*) Remove cause of peritonitis, *e. g.*, appendicular abscess, ruptured or perforated intestine, etc., site of the celiotomy incision depending on cause; if the intestine is much distended, incision of one of the most distended coils and evacuation of its contents, followed by flushing out intestine by inserting a long rectal tube into the lumen of the intestine, washing latter out thoroughly both distally and proximally to the opening; suture of bowel if not overdistended and paralyzed, otherwise drainage of proximal end of bowel; removal of exudate from the peritoneal cavity *preferably* by moist sponges; protection of all raw surfaces or modified peritoneal surfaces by gauze closure of the rest of the abdominal wall.

Tannigen in Diarrhea.—C. M. Clark (*Therapeutic Gazette,* June, 1900) describes his experience with tannigen in the treatment of diarrheal affections. The first case in which he used it was one of chronic tuberculosis which for three months was accompanied by a watery discharge from the bowels every hour or two. All the astringents known had been used without avail. The author then tried tannigen in ten-grain doses every two hours, together with bicarbonate of soda, sugar of milk and powdered ipecac. The bowels thereafter moved but twice daily and their watery character disappeared. The patient regained some strength and her condition improved greatly. In one other affection did tannigen prove very efficacious, namely, leucorrhea. The following combination is suggested:

℞ Tannigen 5i
Acid borac 5ii
Zinci sulphat ..... gr. x
Ext. hydrastis. fl. ..... f. 5ii.
M. Sig. Dissolve in a cup of hot water and then add to three quarts of hot water for injection at bedtime.

Ulcer of the Leg.—H. Baaz (Gratz) publishes good results from the following treatment, which is a modification of the method of Unna (*Semaine Médicale,* June 6, 1900): After cleansing the ulcer and its environs with green-soap and bichloride of mercury solution, 1-1000, he sprinkles its surface with iodoform powder and covers the adjoining skin with an ointment composed of zinc oxide and starch, each one and yellow vaseline, three parts; over this is laid sterile gauze and cotton. Then in layers separated by bandages he smears an ointment composed of oxide of zinc and gelatin, each two, glycerin and distilled water, each eight parts. Finally, a muslin bandage embraces the whole dressing. The patient may walk with this dressing, which is renewed after three weeks or sooner if soaked with exudate. When granulations begin they are covered with red oxide of mercury ointment and later with borated vaseline. After cure the scar is protected by the oxide of zinc and gelatin ointment, and finally only by a bandage. If the ulcer be infected, rest in bed and wet dressings of aluminium acetate precede the above till the inflammation is cured.

Acute Glandular Fever.—In infancy and childhood there is always a peculiar vulnerability of the lymph-nodes. They enlarge in many of the infectious diseases, in tubercular involvement, and as a simple hyperplasia. But there is a distinct involvement, says W. F. Boggess (*Archives of Pediatrics,* June, 1900), of the lymph-nodes posterior to and beneath the sternocleidomastoid muscle, having features which point to a specific

infection. It occurs in the cold months of the year, sometimes in epidemics, and, so far as reported, the limit of age is from two to twenty-three years. The illness is sudden in its onset, with headache, fever, pains and stiffness in the neck, back and limbs, and pain on swallowing. There may be a chill and rigor, or vomiting at the outset. There is angina which may vary from redness to ulceration, and other than cervical lymph-nodes may be involved, especially the axillary, inguinal and mesenteric. The spleen and liver are always enlarged, and mild gastro-intestinal symptoms are usual. The prognosis is good, but the disease may be prolonged by anemia or general depression. For treatment apply belladonna and ichthyol locally, open bowels with calomel and follow with intestinal antiseptics, salol, naphtalin, and dermatol, and build up with cod-liver oil and tonics.

When to Operate in Appendicitis.—F. de Quervain (*Semaine Médicale*, June 6, 1900) considers each case a law to itself and gives the following illustrations. A mild onset has these symptoms: Ileocecal or umbilical colic, good pulse, a little accelerated, temperature flat or somewhat elevated, some vomiting, slight diffuse abdominal tenderness, muscular rigidity and indefinite infiltration in the ileocecal region, no cyanosis, no jaundice, tongue moist. Such a patient would in the usage of most American surgeons be operated on at once in order to prevent complications, but, in the opinion of the author, should wait for a second attack, because the danger of hernia is so great and primary union not certain. A second clinical picture is colored as by rapid invasion, repeated violent vomiting, elevated pulse and temperature, prostration, intense diffuse abdominal pain and tenderness, no mass appreciable in the iliac fossa—in short, by the features of a peritonitis well established after perhaps only two days of illness. Should we operate at once here? If the patient has begun to show septicemia with alternating anxiety and indifference not accounted for by the pains, then operation usually offers so few chances of success that we had best abstain therefrom. A third class of cases is affected by peritonitis but is not accompanied by signs of grave sepsis. The pulse is rapid, yet of good quality, the temperature shows no drop or low level so often the sign of intense sepsis. In these patients we should operate with best hope of success but good results frequently follow brief delay, because often a serous peritonitis, which is a reaction and disappears without operation, accompanies an appendicitis with and without abscess. In the former cases (without abscess), it may need no operation. If now we do operate we add the shock of intervention to that of the disease and open a peritoneum very vulnerable to the invasion of extraneous germs. Unfortunately, the above three general classes of cases are least frequent, because, as a rule, the physician is called only after the initial stage has passed or the patient himself has taken various violent and dangerous purgatives or emetics or both. Then the clinical conditions present three variations also. One patient may present the symptoms and signs of advanced and well-established general peritonitis with pronounced meteorism, no masses felt by external, vaginal or rectal examination, high temperature, poor, thready, rapid pulse, depreciated general condition. As a rule, such cases have multiple foci of pus among the coils of the intestine and should in general be treated medically with ice and opium until or unless an abscess appears which can be evacuated by simple incision. Such patients are apt to be too far gone to stand full eventration for the peritonitis. Again, another patient presents a diffuse peritonitis without adhesions, difficult to diagnose from the peritonic reaction of the crisis. Here multiple incisions and wide open drainage are indicated. Lastly the patient with the small or the large circumscribed abscess always deserves operation at once.

Repeatedly Sterilizing Sponges by Boiling.—C. A. Elsberg of New York (*Medical Record*, June 30, 1900): (1) Sponges freed from calcareous matter by immersion for twenty-four hours in eight-per-cent. muriatic acid solution and then thoroughly washed in water. (2) Boil for fifteen minutes or longer in a solution of potassium hydrate, 1 part; tannic acid, 3 parts; water, 100 parts. (3) Wash in water or carbolic acid or sublimate solution until all potassium hydrate-tannic-acid-mixture (which is dark brown in color) is removed. (4) Sponges are preserved in five-per-cent. carbolic acid solution. When soiled, wash them in water and boil them again in the solution, etc. The solution can be used any number of times.

Appendectomy in the Interval.—*La Semaine Médicale* (June 6, 1900, p. 192) gives the following details in this procedure: The incision of the skin may be according to the methods of Roux, McBurney, Schüller, or Jalaguier. About a finger's breadth from the right anterior superior iliac spine Roux makes his incision of three to four inches with its center opposite the spine and course parallel to the arch of Fallope. Sharp division of the tissues is his choice. McBurney makes a two- to four-inch incision, straight, normal and centered on the line joining the anterior superior iliac spine and umbilicus. Reaching the external oblique fascia, it is divided parallel to its fibers and the internal oblique and transversalis muscle fiber bundles are separated bluntly through the widely-retracted wound. Then these also are retracted giving free opening into the peritoneal cavity. Schüller uses a vertical incision outside of and parallel to the external border of the right rectus, straight, with its upper third above the line adjoining the anterior superior iliac spine to the umbilicus. Here the conjoined aponeuroses are divided just before they separate to form the sheath of the rectus. Jalaguier makes a vertical straight two- to four-inch incision, parallel to the outer border of the right rectus, one-

third above the line between the spine and the umbilicus and in the center of this line. The external oblique aponeurosis is divided and the flaps seized and retracted with artery clamps. The sheath of the rectus is now opened the length of the skin wound and little internal to its outer limits. The muscle belly is now freed from its sheath and drawn far inward. The posterior of the sheath of the rectus is now cut (as was the anterior) about a half-inch internal to its outer limit and for the length of the skin-wound. Careful recognition of the extraperitoneal layer of fat, elevation of the peritoneum before incising, thorough walling-off of the general cavity from the disease by sponges, gauze pads or masses, give the approach to the appendix completely. The organ is, categorically, free, adherent or buried behind the cecum or beneath adhesions and abscess-formation. Search for it begins best in the fossa and thence toward the midline, these commonly finding the cecum early. All adhesions should be torn under view and bleeding stopped before proceeding. Roughness and failure to see what is being done may result in almost any accident, tears into the intestine, ureters, bladder, damage to spermatic vesicles or ovaries, etc. The ablation of the appendix when isolated is easy, best between two lines of clamps to stop mesenteric bleeding. Cauterization, suture of the stump-end and, finally, inversion of the stump finish the deep operative field. The parieties must be closed with direct regard to the anatomical layers and the method of opening the peritoneal cavity.

Pituitary Body as a Therapeutic Agent.—Since 1886, when Marie suggested that the pituitary gland played an essential rôle in acromegaly, it has been considered theoretically possible that the internal administration of this gland might prove to be very beneficial in this disease. W. M. Leszynsky (*Med. Rec.*, June 30, 1900) reports the results which he obtained from long-continued use of the extract in two cases of acromegaly. Some investigators have thought the remedy very efficacious in so far as relieving headache and paresthesias was concerned, but the progress of the disease has not been influenced. One theory has been "that the increased secretion of the prehypophysis in acromegaly acts as a direct stimulus to the connective tissue cells, and by its persistent action slowly augments their growth." If this were true the use of the gland would be contraindicated. It will thus be seen that it has been used only empirically. The author believes that it is absolutely inefficacious, and that there are neither rational nor logical grounds for its therapeutic use in the disease for which it has been used.

Influenza in Children.—Influenza is an acute infectious, contagious, epidemic and sporadic disease, due to the bacillus of Pfeiffer, and attacks children of all ages. H. B. Sheffield (*N. Y. Med. Jour.*, June 30, 1900) reviews the disease to some length, entering into the symptoms, pathology, diagnosis and treatment. The respiratory symptoms are very constant and may consist merely of a coryza or pharyngitis or may result in a bronchitis or pneumonia. The digestive organs are almost invariably implicated. He believes that the Eustachian canal and frontal sinus serve as portals of entry to grippal infection of the nervous system. The nervous symptoms may be simply a hyperesthesia, somnolence, insomnia and vertigo; or they may become the typical ones of a severe meningitis. The diagnosis is usually made easy if attention is paid to the following signs: (1) The invariable presence of the influenza bacilli in the expectoration which may be recognized by the fact that they stain well with Ziehl's carbol-fuchsine solution and decolorize with Gram's stain. (2) The simultaneous development of respiratory, digestive, and, at times, of nervous phenomena. (3) Early and pronounced prostration incommensurate with the severity and duration of the attack. The active treatment is chiefly symptomatic, but the author believes that sodium benzoate has proven almost a specific in many cases. A moderate case should be given:

℞ Sodium benzoate .....
Salol .....
Acetanilid aa.....grs. iss
Caffeine .....gr. ¼.

One such powder should be given to a child six years old every hour, or, if the pain is severe, one-twelfth of a grain of codeine may be added. A favorite mixture is:

℞ Sodii benzoat.....
Antipyrin aa.....ʒss
Liq. ammoni anisat.....
Syr. scillæ comp. aa.....ʒii
Syr. althaeæ.....ʒiss
Aquæ anisi q. s. ad.....ʒii.

M. et Sig. One tablespoonful every three hours to a child six years old. The continuous inhalation of compound tincture of benzoin, arranged by adding a teaspoonful of the tincture to a quart of boiling water, is thought to be an admirable respiratory antiseptic, expectorant, and antispasmodic.

The Parasitic Nature of Cancer.—A. M. Sheild (*Brit. Med. Jour.*, June 16, 1900) puts on record the following case: A married woman, aged thirty-six years, had suffered for six months with irritation about the left nipple, which was soon diagnosed as Paget's disease. In scrapings from the patch were found psorosperms. No subjacent induration was perceptible. The breast, pectoral fascia, and a wide area of skin were removed. The skin showed the typical lesions of malignant dermatitis, but there was no evidence of carcinoma in the breast proper. Two years later a small lump appeared at the inner end of the scar, which was removed and proved to be spheroidal-celled carcinoma. The epithelial cells show extreme vacuolation, appearances often described as psorosperms. The recurrent mass was at least six to eight inches from the original disease.

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SATURDAY, JULY 7, 1900.

A MEDICO-SOCIOLOGICAL NOVEL.

ORDINARILY when the novelist takes it into his head to afflict the children of his fancy with some sort of suffering which will either conveniently render them *hors de combat* temporarily or remove them altogether from the scene of action, the result is so really comic from the standpoint of plain every-day medicine, that we are more moved to laughter than to tears or terror. In the most recent work of the well-known French realistic writer, M. Emile Zola, such criticism is, however, far from applicable, and as the book—to which the author has given the suggestive title, "Fécondité" (fruitfulness)—deals with subjects which must appeal to the medical profession at large, we deem it worthy of editoral notice.

According to Mr. Zola the dominant evil of the Parisian domestic life of the present day is the voluntary restriction of offspring, and to such enormous proportions does he believe this evil to have grown that he foresees in it the almost absolute annihilation of the race. Accordingly, in writing this book he unquestionably has been guided by an intense and sincere desire to teach his countrymen a powerful moral lesson, namely, that Nature inevitably inflicts a terrible revenge upon all who attempt by any form of cozenry to frustrate her designs for the unlimited perpetuation of the human species. To impart this lesson in the most terrorizing manner possible he has armed himself with data of the most blood-curdling sort from public and private sources. And just here lies the immense power of the man. Instead of retailing these facts after the fashion of the lay writer, ignorant of their real significance, he handles them, for the most part, with a skill and a sureness of understanding which will at once command the admiration of every medical reader.

Of the horrors of the traffic in wet-nurses, which goes on in Paris even at the present day, and of the ghastly system of baby-farming by which, if Zola's account be strictly true, thousands of the infant offspring of unmarried young mothers perish annually, he draws a picture before which even the case-hardened physician retreats in shuddering amazement. With no less bold hand he withdraws the coverings from those foul ulcer spots, the dens of abortionists and "sage-femmes," which are constantly sapping the vitality of Paris, and exposes them in all their phagedenic hideousness. Nor is he content with this. In the person of Dr. Gaude he depicts for us a certain type of operating gynecologist *à la mode*, a person as unscrupulous as he is skilful and one who, for the mere love of operating, unsexes yearly a numerous *clientèle* of women whose sole desire is to avoid the responsibilities of maternity.

The far-reaching results of all those methods to outwit Nature and thus destroy the fruitfulness of the race are followed out with the keenness and indefatigability of a sleuth-hound, and the action and reaction of crimes against Nature are portrayed in all their manifold hideousness, and with a realism that at once carries conviction. Throughout each social stratum, from the highest to the lowest, the leaven of the vice against which Zola cries out works the same results: immorality, impotence, madness and murder. It is a horrid picture and yet one to which no medical man of experience, no student of sociological problems, will deny a place well within the realms of the extremely probable.

In sharp contrast to this wretched condition of affairs the author presents the other aspect of the problem and depicts in glowing colors the happiness of his ideal people, to whose fruitfulness he sets no limit. But even here his art still remains consummate. He never loses sight of the fact

for a moment that he is writing on a practical subject, never falls back on the ancient platitude about the Lord's providence. The fruitfulness which he idealizes is not limited to the matter of children, but extends to such qualities as courage and resource. Zola's chosen people do not produce an endless horde of candidates for the hulks, the hospital and the poor-house, but sturdy vertebrate creatures who inherit a power of initiative, and indomitable energy and an infinite capacity for honest toil. In such people, and in such only, can Zola see the ultimate salvation of his race.

If we know anything of medical men in general, it is that they have a weakness for seeing their own guild portrayed in fiction. In the volume under consideration they will find the good doctor as well as the bad and will have a superb chance to follow their actions, traced out by a master-hand, in the face of one of the most vital and interesting problems that confront the age.

CONTRIBUTION TO THE STUDY OF GOUT.

The problems of metabolism at the present time may be said to be most fruitful from the standpoint of theoretic research. Of these, the questions concerning the pathologic disturbances which underlie the clinical picture of gout have been most rigorously investigated. The effects of the urates have been attacked from two directions. The cutting off of the kidney from the rest of the body and the abrogation of its functions have given much information, but the interpretation of results has been unsatisfactory because of the complexity of the processes involved. Another method, and one which has proven more capable of exact experimentation, has been to inject into the body certain of the derived substances eliminated by the kidneys.

Ebstein, in his studies on the nature and treatment of gout, first adopted this latter method and within recent years his work has been largely amplified by that of Freudweiler and now most recently by W. His, Jr. (*Deutsches Archiv f. klin. Med.*, Vol. 67, H. 102, p. 81). The last investigator has used the biurate of sodium and has injected it into the peritoneum and joints. From a large number of experiments he presents the following interesting conclusions: (1) Biurate of sodium when injected into the abdominal cavity or joints of rabbits produces an inflammatory reaction accompanied by necrosis. This differs from the process instigated by the presence of indifferent foreign bodies through its earlier beginning, greater intensity and extensiveness, and through the invasion of neighboring parts. In joints, the cartilage is uninvolved, but the synovia and periarticular tissues are destroyed. (2) Biurate of sodium acts partly as a foreign body, partly as a tissue poison of moderate intensity, this latter action depending on the solubility of the salt. (3) Amorphous, the salt may undergo crystallization within the body. (4) Even large quantities of urate are absorbed from abdominal and joint cavities in from eight to ten days at the outside. In this process the phagocytes play the most important *rôle*, mono- and polynuclear leucocytes and granular and giant cells. In the interior of these cells the destruction of the salt is rapidly accomplished; it is impossible to demonstrate its presence in the local lymph-glands. (5) It is possible that in gout, as found in the human being in the acute forms, similar processes are carried on, but in chronic cases the powers of resistance of the organism have become diminished. (6) In autopsies on gouty subjects it is of importance to consider the presence of freshly-inflamed regions, and under the therapy it is necessary to pay attention to the vital processes as well as to chemical reactions.

ECHOES AND NEWS.

NEW YORK.

Report of Contagious Diseases.—For the week ending June 30, 1900: Measles, 202 cases and 24 deaths; diphtheria, 285 cases and 35 deaths; laryngeal diphtheria (croup), 4 cases and 7 deaths; scarlet fever, 95 cases and 4 deaths; chicken-pox, 15 cases; tuberculosis, 123 cases and 133 deaths; typhoid fever, 29 cases and 7 deaths; cerebrospinal meningitis, 6 cases; totals, 753 cases and 216 deaths.

Antivaccination Meeting.—A meeting of the Executive Committee of the Antivaccination Society of America and of all opponents of compulsory vaccination was held in New York on Friday evening, July 6th, to take into consideration the "recent violent usurpation by Gov. Roosevelt and the State Board of Health in imprisoning a number of negroes at Hudson, N. Y., to compel them to submit to vaccination."

Medical Bequests.—Among the bequests of Mrs. Emma A. Schley of this city, whose will was filed for probate in the Surrogate's office on Saturday, is $10,000 to the New York Medical College for Women. Mrs. Schley also made charitable gifts in her lifetime, including over

$100,000 to the Ophthalmic Hospital and a large sum to found an old ladies' home in Watertown.

Fire Victims in the Hospitals.—Sixty-seven patients suffering from bruises and burns inflicted at the fire of the North German Lloyd Steamship Company June 30th were received into the New York hospitals. Of these Bellevue received 33, Hudson Street Hospital 28, and St. Vincent's 4.

Obituary.—Dr. Louis Arcularius, a well-known Armenian physician, died suddenly July 1st at his home, No. 121 East Twenty-fifth Street. He did not come downstairs at his usual hour and was found dead in his bed. The cause has not been ascertained. He leaves a widow.

Toy Pistol Causes Lockjaw.—Playing with a toy pistol on June 24th, fifteen-year-old George Krack snapped the trigger in the flesh between his thumb and forefinger. The injury seemed slight, but on June 29th there was a swelling, and the boy was taken to the Presbyterian Hospital, where he was reported to be dying of lockjaw.

Dr. Pilcher Honored.—The Board of Regents of the University of Michigan conferred the honorary degree of LL.D. at the commencement exercises held June 21st upon Lewis S. F. Pilcher, Brooklyn, N. Y., Professor of Surgery in Long Island College Hospital and editor of the *Annals of Surgery*.

Barren Island Injunction.—An injunction has been granted to the Sanitary Utilization Company, which runs the Barren Island garbage plant, by Justice Andrews of the Supreme Court, restraining the Board of Health from enforcing the act recently passed by the Legislature prohibiting the burning of garbage and other offal on Barren Island, pending a decision on the constitutionality of the law. In case the act is declared constitutional, there will be two courses left open to the city, by which to dispose of its garbage. One is to dump it into the sea. The other is to build crematories along the river fronts of the Boroughs of Brooklyn and Manhattan. "To build these crematories in sufficient number," said President Murphy, "would mean an expenditure to the city of not less than $20,000,000. The company that now disposes of the garbage there has a system which was adopted after long and careful investigation by a committee that studied sanitary regulations both in this country and in Europe. There has not been a complaint as to disagreeable odors from Barren Island since June, 1899. The people who are the chief complainants are real-estate dealers who wish to enhance the value of property in the neighborhood of the island. We have compelled this company to spend nearly $100,000 in improving their plant."

Paying the City's Blind.—Nearly five hundred blind men and women visited the Department of Charities, at the foot of East Twenty-sixth Street, June 28th, and received each $50 in gold, the city's annual donation toward their support. By law the Board of Estimate is directed to set aside $75,000 annually to be distributed among the city's blind. Of this sum $30,000 is reserved for the boroughs of Manhattan and The Bronx. Yesterday $24,450 in shining gold was given away to the blind of the two boroughs whose names were properly listed. Their claims to the money have been under investigation during the last three months. Assistant Supt. William Walsh, who for twelve years has dealt with the blind pensioners at his office and visited them at their homes went with a city paymaster on a round of visits to the homes of about 111 blind men and women whose names and addresses are listed but who did not turn up at the distribution. There are 600 names on this year's list. The highest previous number was 512. That was three years ago. The blind applicants for the $50 must be American citizens, must have been residents of New York city for two years before applying and must not have been in an institution for the blind for one year previous to the date of distribution.

The Nathan Straus Milk Charity.—Inasmuch as with the approach of summer the milk charity of Nathan Straus is about to enter the season of its greatest activity and usefulness, it has been thought desirable to state briefly to the members of the medical profession the facilities offered by this charity and particularly to call their attention to certain new mixtures furnished by it. This charity, which was organized in 1893 in a little shed on a dock at the foot of East Third Street, now occupies a large two-story building on Avenue C near Tenth Street and dispenses during the year from various branches some five hundred and fifty thousand bottles of Pasteurized milk. In order to furnish a food better adapted to very young or sick infants, two new modifications have recently been prepared, one intended for sick infants and the other for healthy infants; the former is a dilution of milk with three times its bulk of water and lime water with sugar added, so as to provide a food containing 1 per cent. fat, 5 per cent. sugar and 1 per cent. proteids; this is dispensed in three-ounce bottles. The second new modification intended for healthy infants of early age represents 2 per cent. fat, 5 per cent. sugar and 1 per cent. proteids, also dispensed in three-ounce bottles. It is believed that these two formulæ may be of the greatest value in providing a food better adapted than those previously prepared for very young and sick children. Another modification containing about 4 per cent. fat, 7 per cent. sugar, and 2 per cent. proteids is dispensed in 6-ounce bottles. Whole milk is also dispensed in pint-bottles. All this milk is accurately Pasteurized in hygienic nursing bottles at 75° C. (167° F.), is rapidly cooled and is delivered to the branch depots in refrigerator-wagons. With each bottle a sterile nipple is supplied. The milk will be dispensed during the summer at the laboratory, 151 Avenue C, as

well as at the following branches: Roof Garden of Hebrew Institute, 238 Mott Street, 65 Market Street, 510 West 44th Street, Battery Park, City Hall, Tompkins Park, Central Park, St. Mary's Park, Bronx, and at the following Recreation Piers: Foot of East Third Street, foot of Christopher Street, foot of East 24th Street, foot of West 50th Street.

The charges made for the milk are as follows: Three-ounce bottles, eight for five cents; six-ounce bottles, one cent each; sixteen-ounce bottles, two for five cents, as well as deposits to insure the return of the bottles, as follows: Three cents on three-ounce bottles; four cents on six-ounce bottles; five cents on sixteen-ounce bottles. The milk will be supplied free to any applicant who presents a statement from a physician that she is unable to pay for it. Such applicant must, however, leave the usual deposit to insure the return of the bottles.

PHILADELPHIA.

College of Physicians.—A Library Fund of $50,000 has been raised, largely through the efforts of Dr. W. W. Keene.

Seaside Home.—The Jewish Seaside Home for Invalids at Atlantic City was opened for its eighth season, June 30th. It is largely a Philadelphia institution.

Pennsylvania Hospital.—A tent 40x20 feet has been erected on one corner of the hospital grounds for the treatment of cases of heat prostration during the summer. It is found that such patients do better when sleeping in the tent than when in the hospital building.

State Board of Examiners.—The midsummer examinations for license to practise medicine were held June 26-29th. Of the regular school there were 110 candidates in Pittsburg and 220 in this city, 15 of the latter being women. Special, and also successful, efforts were made to prevent the leakage of questions such as occurred last year.

Illegal Sale of Oleo.—The Pure Butter Protective Association is to ignore the State Dairy and Food Department in prosecuting oleomargarin frauds. The members are indignant because of the attitude assumed by State Commissioner Cope. Speakers are to awaken the farmers throughout the State regarding the food laws.

Health Report.—Deaths in the city for the week ending June 30th were 497, an increase of 117 over those of the previous week and of 77 over the corresponding week of last year. Contagious diseases: Diphtheria, 76 cases, 15 deaths; scarlet fever, 63 cases, 3 deaths; typhoid fever, 13 cases, 7 deaths. Three adults died from heat prostration and 55 infants of cholera infantum.

Hospitals of the Guard.—Surgeon-General J. V. Shoemaker has issued a circular detailing the rules of the medical department of the National Guard of Pennsylvania. Applicants for the position of surgeon or assistant surgeon must have been in active practice for at least four years. The hospital corps of a regiment consists of a steward and one enlisted man from each company. These men must receive instruction from a medical officer for at least eight hours each month.

Pathological Society.—At the meeting of June 14th Dr. Ravenel reported a case of tuberculosis cutis due to local inoculation. Experiments on animals by feeding are cast aside by some as not applying to human beings. He has produced tuberculosis in four animals by feeding and in all the cases the lungs were the organs most affected. In the discussion two cases of tuberculosis cutis were reported, both occurring in carpenters working with the lumber of cattle cars. The diagnosis should not be made from the histology, but only when the tubercle bacillus is found. Dr. A. O. J. Kelly showed a specimen of diaphragmatic hernia. From 20 to 25 cm. of the splenic flexure of the colon was in the thorax. An uncommon condition was the adhesion of herniated omentum to the upper surface of the diaphragm. Dr. J. Hendrie Lloyd reported an interesting case of aphasia due to uremia. There was almost complete motor aphasia, with complete word-blindness and agraphia. The patient could understand all that was said to her. Paralysis was not present. As the three centers were not contiguous the problem presented was to locate the lesion that included them all and yet caused no hemiplegia. There was not any heart-lesion present. Autopsy showed no lesion in the speech zone. The kidneys were contracted, and the left was cystic. The case was presented as one of focal disease of the brain due to Bright's disease, probably caused by an affection of the vascular supply due to the uremia. Dr. Packard spoke of a case simulating apoplectic hemiplegia. Albumin was found in the urine. In a short time the aphasia cleared up and the patient recovered. The need of a surer way of diagnosticating between hemorrhage and uremia was emphasized. Dr. Lloyd mentioned a case simulating brain tumor, the patient being almost ready for operation, when it was discovered to be a case of uremia. He is very cautious in making the diagnosis of hemorrhage when there is advanced kidney disease.

Dr. Lloyd then read the notes of a case of endocarditis with cerebral embolism which was treated by antistreptococcic serum. An attack of rheumatism, with endocarditis, was followed by a loss of strength and what was believed to be a mild attack of typhoid fever. The heart conditions grew worse and malignant endocarditis was diagnosticated. The serum was administered in 10 cc. doses, seven injections being given. Each injection was followed by urticaria, great nervous disturbance, and prostration. Right hemiplegia occurred a week before death. Autopsy showed lesions of the mitral valve which were more vegetative than ulcerative. Infarcts

of the spleen were present. The case showed the absolute futility of antistreptococcic serum. Dr. Sailer thought the case was not a clear one of streptococcic infection and that it was not just to say that it was a failure of serotherapy. He believes that chronic heart-disease favors typhoid infection by the accompanying congestion of the intestine. Dr. Ravenel said there was no evidence of streptococcic infection and that the staphylococcus pyogenes aureus should be suspected if rheumatism was the cause. Dr. Lloyd stated that he did not see how it was possible to make a positve diagnosis in these cases in reference to the exact serum to be used. He thinks that the mild attack of typhoid fever lighted up the fatal lesion in the valve previously infected by rheumatism.

CHICAGO.

University of Illinois.—The Medical Department of this University has purchased the property adjacent to its hospital building, now occupied by the West Division High School, for $186,000.

Appointment of Dr. Dreyer.—Dr. George P. Dreyer, Associate Professor of Physiology in the Medical Department of Johns Hopkins University, has accepted the Chair of Physiology in the Medical Department of the University of Illinois.

Health Statistics.—With one exception, the present daily June mortality is the lowest on record since 1889. The average June mortality for the decade 1890-1899 was 60 per day; the lowest, 53, in 1898; the highest, 68, in 1894. For the first twenty-three days of the present month the aggregate number of deaths have been 1,243, or 54 per day—one-tenth lower than the previous average. These figures are without reference to any increase of population during the period. The bulletin of the city health department ascribes this gratifying showing to the phenomenal temperature, caused by the unusual prevalence of northernly winds and, in some degree, to the improved quality of the public water-supply since the opening of the drainage canal. It is not to be expected that these meteorological conditions will obtain much longer, and there is reason to apprehend that a heated term of unusual intensity will follow.

The Murphy Button; Report of 1620 Cases.—Just eight years ago Dr. Murphy used the button on the first human being. Many statistics could be cited to show the influence of the button on lowering the mortality of all anastomotic work. In detail he considers these as follows: End-to-end anastomosis which formerly yielded a mortality of from 50 to 100 per cent., now shows a mortality of but 19.7 per cent. This seems to demonstrate the great value of the Murphy button in gangrenous hernia when the mortality reached the ebb figure of 14 per cent. It was for the operation of cholecystenterostomy that the button was first devised. Prior to its introduction there had been but 11 cases recorded. While formerly Dr. Murphy recommended it in every gall-bladder case, he now restricts its use to the conditions in which there is a permanent obstruction to the common duct. The mortality is 14.7 per cent. Gastro-enterostomy and uretero-enterostomy present very favorable statistics. Reviewing the history of bowel approximation, he speaks of the early efforts of the French as far back as 1802. In 1888 Senn's classic paper gave a tremendous impetus to intestinal surgery. In the eight years during which the button has been used, the following conclusions regarding it have been reached: (1) It approximates without suture. (2) The time of operation is much shortened. (3) The union is ideal. (4) There is no contraction of the scar. (5) The physiological function of the gut is not interrupted at any time. There are two great classes of objections to the use of the button: (*a*) The opening may be occluded by food or other particles prior to the sloughing of its attachment. (*b*) There may be prolonged retention of the button in the gut or abdominal cavity. Both these matters are of small moment, there having been but three fatal cases in the 1620 considered traceable to such causes. It is of little consequence whether the button is passed or not. The portions of the canal in which it has been found retained are enumerated as follows: In the stomach, 22 times; colon, 5 times; ileum, 2 times; jejunum, once; cecum, twice, rectum, 4 times.

Tuberculin as a Diagnostic Agent.—Much has been published, pro and con, on the reliability of tuberculin as a diagnostic agent in detecting the existence of tuberculosis in cattle. A study of the figures contained in Bulletin No. 1, recently issued by the State Board of Live Stock Commissioners of Illinois, giving a synopsis of the record of the year's work, is the very best possible proof that can be secured. There were 3655 cattle tested. Of these 560 were condemned. Of the 560 condemned, 3 that did not react typically to the tuberculin test were condemned on physical evidence, and were found upon post-mortem examination to be diseased. Of the 560 animals condemned, 9 upon post-mortem examination failed to show the lesions of tuberculosis in any of the organs explored or explorable during an ordinary examination and without the use of the microscope. Assuming that failure to discover in the viscera or organs disclosed to view lesions of tuberculosis is evidence that tuberculosis does not exist, there were 1.6 per cent. of the animals condemned not diseased. This assumption is not by any means admitted, since it is an indisputable fact that a considerable period must elapse between inoculation of an animal with the tubercle bacilli and a sufficiently developed localization of the disease to be visible to the eye, or some gland or organ not visible may be affected. If there are tubercle bacilli in the animal and yet no localized manifestation, a re-

action would occur from an injection of tuberculin. One of the best possible demonstrations of the fact that a failure to discover macroscopically the presence of tuberculosis in the carcass is not evidence that the animal is not free from disease, or that the tuberculin has failed in a given case, is found in the records published of the tests and investigations conducted with and upon milk from tubercular cows by Dr. William A. Evans and Adolph Gehrmann in the Columbus Medical Laboratory. In both the milk and cream of the cow referred to, in which no disease was discoverable on post-mortem examination, tubercle bacilli were found in abundance by the microscope, as evidenced by microscopical post-mortem examinations. The question as to whether tuberculin fails to disclose the existence of the disease, save in a few extremely advanced cases that may be clinically diagnosed, is not so amply proven or provable, since but very few animals that fail to react to tuberculin are destroyed and examined post-mortem. A few such inspections during the past year are worthy of notice. Six cows that were tested with tuberculin with other cows in the herds and that did not react were destroyed, because of being actinomycotic, together with one other cow with mammitis. In none of these carcasses did a most searching inspection disclose any symptoms of tuberculosis.

Milk from Tubercular Cows.—While there are always dissenters from every opinion expressed by advanced thinkers and investigators, a preponderance of testimony is to the effect that milk from tubercular cows, with or without udder infection, is capable of transmitting and does transmit tuberculosis to human beings and is, therefore, to be considered dangerous and should not be used for food. Numerous investigations have been conducted by experimenters throughout the world with milk from tubercular cows for the purpose of ascertaining to what extent tubercle bacilli exist in such milk and the extent of danger attending its use of food. These investigations have been conducted with the microscope, and by inoculating experiment-animals with milk taken from tubercular cows, and the results have been varied. In nearly all instances where the milk used for experiment came from udders that were tubercular, tubercle bacilli have been found in the milk, and it is now universally conceded that milk from a tubercular udder may, in all cases, be considered dangerous and capable of transmitting the disease through ingestion. While many of the investigations conducted with milk from tubercular animals whose udders were free from disease gave negative results, proving and disproving nothing, there have been many investigations that gave positive results, tubercle bacilli being found in a greater or less per cent. of the milks under investigation.

Examinations of Milk and Inoculation Experiments.—Dr. William A. Evans and Adolph Gehrmann, who have conducted a series of inoculation experiments and examined many hundreds of specimens of milk microscopically, have reached the following conclusions: (1) Prolonged searching of the concentrated milk from cows showing tuberculosis, but with sound udders, will reveal bacilli in about 35 per cent. of the cases. (2) Bacilli are found with about equal frequency in the sediment and in the cream. (3) This milk when concentrated will produce tuberculosis in the guinea-pig in about 25 per cent. of the cases. (4) Not much dependence can be put on the physical appearance of the milk in cases in which the udder is not demonstrably involved. (5) While the large number of cases in which pus-cells were found in the milk would indicate that there was beginning involvement of the udder, there is no question but that the search for lesions in these udders was far more careful than will ever be possible on the living cow, and therefore the udder appearances cannot be accepted as a safe guide. (6) The greater susceptibility of the guinea-pig, the concentration of the milk and the method of administration demand that when efforts are made to apply the results to the human subject, allowance must be made for the different conditions.

The Ideal Physician.—This was the subject of the address delivered recently before the graduating class of Rush Medical College by Dr. Keen. He spoke of the physician from three standpoints: First, his personal life; second, his professional life; third, his public life.

Personal Life: The ultimate basis of esteem is personal character. Wealth for a time may lend its glamor; intellectual attainments for a time may dazzle the judgment; power for a time may achieve apparent success, but when the testing time comes, as come it must to every man when some great temptation to do wrong confronts him, wealth and intellectual power are as if they were not; character is the one thing that tells in this life and death struggle. Having that, you will win the fight and be crowned with the laurel of victory. Wanting that you will succumb, defeated and dishonored. The struggle may be a public temptation known of all men, and if you fall your fall will be like that of Lucifer; or it may be hidden in your own breast, known only to God and yourself; but if you win, the victory is just as great as measured by the eyes of Omnipotence, for a character has been saved and strengthened; a true man has attained his growth. It is due to this prevalence of high character that the profession has won such a lofty place in the esteem of the community. Its purity is almost never impeached. Greatness of character finds its best expression in kindness. To no one are so many opportunities for this fine trait given as to the physician. In the heyday of health and happiness he is not needed, but when sickness and weariness and woe come, when the bread-winner may be taken or the loved mother's gentle life may be in peril, or a sweet little child in whom is centered all the tenderness of unbounded love is lying ill, and death seems

to dog the doctor's footsteps, then the trusted physician, wise of head and kind of heart, is indeed a welcome visitor. Manners make the man. The boor has no place among us. The physician should never be the fop, but always the gentleman; never unclean of clothes or speech, but always neatly dressed and so careful of his words that he need not ask, as did one of General Grant's aides: "There are no ladies present, are there?" "No," was General Grant's stinging reply, "but there are several gentlemen." The next characteristic of the ideal physician will undoubtedly meet with a ready assent—marry as soon as you can support a wife and the hostages to fortune who will make your home life happy beyond compare. But choose wisely and not too hastily. A bachelor doctor is an anomaly. He cannot fully comprehend the hopes and fears and desires of parents. He knows not the lions in the path of childhood. Imagine, if you can, some sweet lassie confiding to him the symptoms of a heart-disease which digitalis cannot cure. The ideal physician is a good husband and a good father, and so will he enter into the lives and hearts of parents and children, not as a stranger, but as one who can partake of all their emotions, because he has felt the same joys, partaken of the same sorrows, loved as they have loved, and it may be, drunk to the dregs the same cup of loss. But the ideal doctor lives also a spiritual life. You gentlemen will have to deal with the entrance and the exit of life. You must often ask yourself what and whence is this new *ego* that is born into the world; whither goes the spirit when it quits this tabernacle of flesh which is left to moulder and decay? The tremendous problems of life and death are daily put before you for solution. You cannot avoid them if you would; they are forced upon you by your daily occupation.

Professional Life: The ideal physician is a member of a learned guild. He should be above the tricks and petty jealousies of trade. True, he lives by his profession, but he who practises for gain is only a hireling and not a true shepherd of the sheep. If you would attain, therefore, to this professional ideal, you must be a constant student, keeping abreast of that scientific progress of which in your community you must be the exponent. You must not be satisfied with the knowledge which you now possess, but you must read, especially the medical journals, or you will be left behind in this day of rapid progress. You must know not only your own language, but must be familiar, at least by a reading knowledge, with French and German, and if possible with other tongues. He who knows two languages is twice the man he was when he knew only one. Be careful in your relations to your patients to deal with them conscientiously. In no other calling is the amount of service to be paid for committed absolutely to the judgment and conscience of the person who is to be paid for his services. Whether you should make few or many visits is left to your discretion and honest judgment. Sordid motives may occasionally lead to the giving of unnecessary attention. But again it is a glory of our guild that very few physicians betray this trust, and those who do quickly lose their professional standing. Watch yourselves jealously in this, and never let the greed of gain dull the fine edge of professional honesty. In your professional relations, never forget to be charitable. The best patients you will ever have will be the grateful poor, and your hearts will often find a sincere and grateful glance better payment that any gold. In your relations with other physicians, you will find many opportunities for that same brotherly kindness which is so beautiful a characteristic of our guild. Always extend to other physicians and their immediate families the courtesy of faithful attendance without pecuniary return. Avoid the petty jealousies, which, I am sorry to say, not seldom estrange physicians from each other. Always believe the best motive unless you know the worst is present. Never say an unkind word of a brother doctor when you can utter a kindly one. Try to be just even to those who are unjust to you.

Public Life: In most communities, especially in small towns and villages, the doctor is one of a small circle of educated men. His scientific studies make him familiar with many public problems, especially those concerning sanitation, the water-supply, the prevention of epidemics, the preservation of the public health, the problems of school-life, the fostering of a proper athletic indulgence, the management of prisons, the care of the feeble-minded, the insane, the poor. On all of these questions you must make your voices heard in the communities in which you live or else you give them over to others less qualified and only mischief can follow. My best wish for you is that you may realize in your own lives these characteristics of the ideal physician. It will matter little then whether your life be long or short, for the proper measure of a life is not how long, but *how* it has been lived, and if you attain to old age, when the hairs whiten and the crows'-feet begin to show, when your natural forces are abated, you will then not be alone in the world, but will have honor, love, obedience, troops of friends and one friend above all others, the Great Physician. And when you pass from this life into the next, then shall you be greeted not only by this one great Friend, but by many from whose pathway you have plucked the thorns and briars of this earthly life; many whom through the devious paths of convalescence you have led back to perfect health, to home, husband, father, mother, children: and even if you have not been able to stay the hand of the grim reaper, those, too, will greet you whose last hours you have soothed amid the pangs of death and have helped through the new birth into the heavenly Jerusalem.

GENERAL.

The Kentucky School of Medicine.—At the commencement exercises, June 26th, which marked

the Golden Anniversary of the Kentucky School of Medicine, Dr. Roswell Park delivered the "Doctorate" address.

Fortune Left to Animals.—William C. Royal, a wealthy resident of Germantown, Pa., who died May 31st, and whose will was probated recently, devised his entire estate, valued conservatively at $50,000, to the Woman's Branch of the Pennsylvania Society for the Prevention of Cruelty to Animals. Mr. Royal devises $200 a month to his widow during her life. After her death the annuity to his widow and his entire residuary estates are to revert to the society.

Treatment of Seasickness.—In a recent communication to the French Academy of Medicine, M. L. Dutremblay advocates the treatment of seasickness by inhalation of pure oxygen under pressure. From numerous observations it appears that this gas generally acts favorably and gives rapid relief. Nausea and vomiting cease, a feeling of comfort supervenes, and this is followed by calmness and sleep; the frequent and incomplete breathing becomes regular, the pulse-rate rises, and headache disappears. Patients should make long and deep rhythmic inhalations. Eight or ten gallons of the gas suffice.

Enteric Fever in Paris.—The London *Medical Press* commenting on this subject says: "It is to be hoped that the somewhat alarming news that is now being circulated of the great increase in the number of cases of typhoid in Paris may prove to be exaggerated, but it will, at any rate, serve as a useful reminder to those who purpose visiting Paris that the possibility of contracting such an insidious disease as typhoid is not wholly imaginary. Suspicion has fallen on the water-supply of Paris, especially that from the Vanne, and if, as is alleged, the incidence of the cases of the disease is found to coincide with the area of the distribution of the suspected water-supply, the importance of the matter cannot any longer be belittled."

Yellow Fever in Cuba.—Surgeon-Major Reed and Drs. Carroll, Agramonte, and Lazear, the Commission recently appointed by Secretary Root to investigate acute infectious diseases in Cuba, have begun operations at Quemados, where several cases of yellow fever have occurred during the last few weeks. Besides yellow fever, they will investigate leprosy, acclimating fever, malaria, and, in fact, everything infectious. The conservative portion of the local press heartily approves of the project.

Prizes with Tobacco Illegal.—Judge Jackson, of the United States District Court for the District of West Virginia, has rendered a decision that tobacco manufacturers should be fined $1000 penalty for offering prizes of any description with packages of smoking or chewing tobacco or cigarettes. The paragraph of the law under consideration provides that packages of smoking tobacco, fine-cut chewing tobacco and cigarettes shall not have packed in or attached to or connected with them any article or thing whatsoever of a foreign nature, and that there shall not be affixed to or branded, stamped, marked, written or printed on these packages or their contents any promise or offer of, or any order or certificate for, any gift prize premium, payment or reward. The manufacturers of cheaper grades of tobacco and cigarettes use the prize plan for increasing the sales of their goods, at the expense of the manufacturers of other line goods. The decision is of importance in tending to improve the quality of all tobacco in packages.

The British Hospital Scandal.—The unpreparedness of the British Army Medical Service to meet the contingencies arising in the South African campaign is now declaring itself and unpleasant criticisms are being heard. They began with three columns of restrained language in *The Times* from Mr. W. A. Burdett-Coutts, Conservative Member of Parliament for Westminster. His disclosures have been widely reproduced, and supplemented by denunciatory telegrams and interviews from survivors and army medical men. A news agency dispatch from Cape Town says: "Certain revelations point to malfeasance in connection with the supplies of comforts for the sick and wounded." On June 25th Lord Roberts replied, saying that he did not wish to shrink responsibility or to screen the shortcomings of the Medical Corps, and he suggested a committee of inquiry. He said there had been an abnormal number of sick at Bloemfontein, due to the exhausting nature of the march and the terribly unsanitary condition of the camp at Paardeberg, where the only water available for drinking flowed from the Boer camp, higher up, where the river was crowded with decomposing animals, and also with a considerable number of wounded after the fight on March 10. No tents were carried, and the public buildings had to be turned into hospitals. In three months there had been 6360 admissions to the hospitals of patients suffering from enteric fever, while the deaths numbered 1370, about 21 per cent. Lord Roberts observed that he did not know whether this would be an abnormal rate in civil hospitals in peace times, but if the rate were abnormal, it was due to the exhausted state of the men and not to the neglect of the Medical Corps." The London correspondent of *The Evening Post* says: "The national feeling has been greatly stirred by Mr. Burdett-Coutts's stories of understaffing, overcrowding, and seemingly unnecessary suffering at Bloemfontein in April and May last. The War Office has habitually neglected the Army Medical Department. It has always been seriously undermanned, its members scarcely recognized as officers, usually excluded from mention in dispatches or public votes of thanks, with little facility for study, or leave for private research, and, in a way, has been treated as the Cinderella of the army. If Mr. Burdett-Coutts by his sweeping indictment changes all that England may well thank him."

Obituary.—Dr. Benjamin Howard, Dr. B. W. MacNichol, and Miss Jane Hamblin, a lady whose influence in hospital work for children has been very great, have died during the past week. Dr. Howard died June 21st at the residence of his friend, Dr. Andrew H. Smith at Elberon, N. J., of cancer. Born in England sixty-five years ago he was graduated from Williams College and from the College of Physicians and Surgeons in New York City. During the Civil War he was an assistant surgeon in the Union Army and served as medical purveyor and director in the Department of the Ohio and in the Army of the Potomac. After the war he served at different times as professor of surgery in the University of New York, the Long Island College Hospital, the Cincinnati Medical College, and the University of Vermont. He was a Fellow of the Royal College of Surgeons in London and Edinburgh, and a Corresponding Fellow of the New York Academy of Medicine. When a very young man Dr. Howard came to America in order to study the question of African slavery. He was for a time, in the course of these studies, engaged as a clerk at a slave auction in St. Louis, Mo. In 1873 he traveled for his health in Europe, Siberia and China, where he was interested in examining the prison systems. As a result he published a book entitled "Trans-Siberian Savages," describing a hitherto unknown people. Several years ago he traveled about the United States examining prison systems, and some of his notes are being prepared for publication. Dr. Smith and Dr. D. B. St. John Roosa are his literary executors.—Dr. MacNichol died in Westchester, N. Y., on June 22d of pneumonia. He was forty-two years old. He was graduated from the Jefferson Medical College of Philadelphia, where he took high honors, and was the pupil assistant of Dr. Samuel Gross. For several years he was health officer of the town of Westchester, and was at various times connected with the New York Deaf-and-Dumb Asylum, the New York Catholic Protectory, and the Manhattan Eye and Ear Infirmary. Eye, ear and throat diseases and insanity were his special work.—Miss Hamblin died on June 23d in St. Vincent Hospital at the age of sixty-seven. She came to this city from Montreal when she was twelve years old and she devoted her whole life to charitable work for children in which she expended most of her considerable means. She was the founder and matron of St. Joseph's Day Nursery. Beyond this her work was general in character and she associated herself with many charities. She was a devout Roman Catholic, worshipping in the Church of the Paulist Fathers; her labors, however, were conducted on strictly undenominational lines.—Dr. King Wylly, a physician of Savannah, Ga., died suddenly of apoplexy at Saratoga, N. Y., on June 24th. He was fifty years old.—Dr. Bennett Bussey, the oldest physician in California, died on June 24th at the age of ninety-three. He was graduated from the medical school of the University of Maryland in 1828. He went to California in 1876. He was a prominent Democrat and served during his career as Senator for Maryland and collector of the port of New Orleans.—Dr. George S. Ward, one of the best-known physicians in Newark, N. J., died in that city on June 25th in his seventy-third year. He was graduated from the New York College of Physicians and Surgeons. He had been practising medicine for upwards of fifty years.

CORRESPONDENCE.

THE STATE HOSPITALS AND PATHOLOGICAL INSTITUTE.

To the Editor of the MEDICAL NEWS:

DEAR SIR:—It is to be regretted that so acrimonious a correspondence should have attended the discussion of the affairs of the State Pathological Institute, and it must be admitted that some of the criticisms that have appeared in your columns have done little or nothing to maintain the dignity of our profession and can lead to no useful results, so far as the present question is concerned. As one who has been approached by both sides for the expression of an opinion and who has so far refrained, I am now tempted to state my views.

A short time ago I was appointed a member of a committee by the Chairman of the Board of Consulting Physicians of the Manhattan State Hospitals to report upon the work done by the State Pathological Institute, which, it was understood, had been established for the purpose of giving aid to the hospitals for the insane by utilization of the material therein, and for scientific research with the State's support. With this end in view, I have during the past few months conferred with the Medical Superintendent of our local hospitals and have examined the reports issued by the State Pathological Institute, of which Dr. Ira Van Gieson is the Director, which purport to give an account of the work done. From such an investigation it does not appear that the original purpose of the Legislature has been carried out; on the contrary, little or no use has been made of the available clinical and pathological material at Ward's Island or elsewhere. Although there were no difficulties in the way, no serious attempt seems to have been made to perform autopsies or to do systematic work. "One brain, one spinal cord and sections of peripheral nerves" have been sent to the Pathological Institute at the request of the latter during the year 1899. Two of the staff of the Manhattan State Hospital have attended the Institute, doing work for two months upon "material supplied by the Institute and not by the Hospital." No examination or study of the patients and no careful observation has been undertaken by the Director or his assistants, although, as we all know, the asylums on Ward's Island are filled with interesting cases which are easily reached.

An inspection of the published reports of the State Laboratory is discouraging, for in them we find evidences of very little actual work that has been accomplished in connection with these or other hospitals. On the contrary, cases from institutions which are not under State supervision have been here and there utilized. The earlier reports, which were known as the *Hospital Bulletins,* were for the most part excellent, and contained many articles of merit from men all over the State, but with the establishment of the Pathological Institute a distinct change became apparent. The most superficial inspection of these reports shows that the majority of the articles are characterized by a visionary and speculative element, and promises of what the Institution intends to do, but what it has not so far accomplished, are abundant.

An early paper of this kind from the pen of the Director received the caustic criticism of an editor whose name is now appended to the petition supporting the administration. This editorial, while perhaps mildly facetious, pictured with rough fidelity the boastful and grandiose pretentions of the Institute. "We learn," it says, "that psychiatry is no science, that clinical methods of investigation are of no service in the study of insanity, and that the best way to study the insane is to have nothing whatever to do with them. The only thing that is necessary is to have a bountiful supply of sphygmographs, chronographs, ergographs, etc., which when combined with a large amount of grapho-maudlin twaddle, can construct a new pathway into the hidden mysteries of the mind. What is wanted by the tax-payer is not silly flattery of a co-worker comparing his immature conclusions and specious borrowing of other's plumes with the masterly conception of the neuron and Flechsig's magnificent work, but some results. Not what 'we' are going to do, but what have you done." (*Medical Record,* January 7, 1899.)

It is natural that an organization whose staff is composed of individuals, none of whom, I learn, have ever had any clinical experience, and who have never been concerned in the management of the insane, should not be one to do the really useful work we were led to expect, no matter how sincere or earnest may be the efforts of the young men who devote their time to research. This purely abstract or speculative work should be done at medical colleges or in outside laboratories, and there doubtless exist many facilities in well-endorsed institutions.

If the State Pathological Institute is to be of use, it should work more harmoniously and effectively with State Hospitals, which it does not at present do. It is difficult to sympathize with the Director and his endorsers in their plea that practically he has been made a martyr because of his modest, disinterested devotion to science, for it is to be regretted that in the early history of the Institute, the Director saw fit to exploit the more or less sensational doings of himself and his assistants in the daily "yellow" journals. Anyone so inclined may find in the Sunday *New York Journal,* November 9, 1897, an interview over the signature of the Director himself; an article with sensational and absurd pictures of monkeys in various stages of maudlin intoxication. This and other interviews of a like nature are not calculated to uphold or advance the claims of dignified, conservative and scientific research, which are endorsed by so many well-known American and foreign names; although it is a matter of doubt how much any of these men know about the actual work done at the Institute.

In conclusion I may refer to the insulting and arrogant criticisms to which the asylum superintendents have been subjected at the hands of the would-be reformers both to-day and in times past, and I am sorry to now find medical men who so easily indulge in offensive depreciation of their brothers who are respected here and abroad and whose excellent work speaks for itself.

Allen McLane Hamilton.

New York, June 21, 1900.

THE PATHOLOGICAL INSTITUTE.

To the Editor of the Medical News:

Dear Sir:—I find lying on my desk a marked copy of the Medical News of June 2d, containing the article by Dr. Wise, the letter signed Chas. W. Pilgrim, and the enclosed circular.

I wish to say that my judgment and my sympathy in this matter are entirely with Dr. Van Gieson and the Medical News. The reports issued by the Pathological Institute are models of scientific research; and the broad grasp of general principles, the thorough comprehension of the relations of medicine to biology and of biology to the fundamental physical sciences, which inform and guide the work of the institute, are too rare and too full of promise to allow one to look with indifference upon any danger that threatens them.

Solomon Solis-Cohen.

Philadelphia, June 19, 1900.

To the Editor of the Medical News:

Dear Sir:—Besides putting my name to the protest against destroying psychiatric research at the Institute, I want to add a few words. Those of us who are working in experimental lines know how hard it is to gather together a group of men who have not only the desire, but also the training and capacity for research work. Dr. Van Gieson, I believe, has such a group of investigators and it certainly seems a great pity to disorganize the Institute, just as it is becoming capable of producing results. While I am sure neither he nor I would antagonize in the least the Hospitals, in order to prevent their having all the pathological and other examinations they desire, yet I believe we both feel that of the two, if a discrimination must be made, the research work is really the more important. The

"practical physician" often forgets that, while some one or other pathological examination may be of great interest to some few persons, it is usually of no further value. Anything, however, which is really an addition to our scientific knowledge is of use to all workers and becomes of value to the whole world. Such increase of knowledge must, as a rule, come slowly, but it is only through such places as the Pathological Institute that such increase can be hoped for. Considering that New York State has undertaken the care of her insane, it seems to me it would be a very mistaken as well as selfish policy to leave psychiatric research to others, especially since she has a place and workers for it.

WM. HALLOCK PARK, M.D.

315 West 76th Street,
New York, June 26, 1900.

OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, June 28, 1900.

THE DEADLY FIELD DAY AT ALDERSHOT—STUPIDITY OF THE WAR OFFICE—FAILURE TO RATIONALLY CLOTHE THE SOLDIER—THE EFFECTS OF PHYSICAL AGENTS ON BACTERIAL LIFE—LIABILITY OF HOTEL PROPRIETORS IN CASE OF PTOMAINE-POISONING FROM FOOD SERVED—RECOVERY FROM LEPROSY—INFLUENCE OF A FISH DIET.

THE deaths of four soldiers from sunstroke during a field day at Aldershot has produced a great sensation throughout the country, and the War Office authorities, already under a cloud in consequence of the blunders made in the South African war, are freely censured. A field day was ordered and 30,000 men went on parade. They were aroused at 5 A.M., and having breakfasted on the regulation tea and bread-and-butter, marched out at 6.15. The weather at first was not exceptionally hot, on the contrary, the general officer commanding expected rain. But about 10 o'clock great heat was felt. The thermometer in the shade registered 89° F., in the sun, 116° F. As the heat continued, "halt" was sounded at 10.30 and "cease fire" at 11.15. The men were then directed to march back to barracks as early as possible, with such period of rest as their commanding officers might think desirable. The men began to fall out in all directions. In some battalions not half the men marched home together. Delirious and unconscious men were brought to hospitals in cabs, carts, and ambulances—indeed, in anything that could be utilized. The road was strewn with men. Even the ambulance men themselves were affected. Instead of being provided with helmets to protect the head against the rays of the sun, the soldiers wore the little forage cap which gives about as much protection as a fig-leaf. Not only this, but, as no summer costume is provided by the authorities, the men have to wear the same clothes in summer as in winter. The War Office has now issued an order that men who are not provided with helmets, shall not be exercised at a distance from barracks. It is really scandalous that fatalities such as this should be required to teach the authorities of an army, a large portion of which has been for generations engaged in service in the tropics, what is the rational dress for the soldier in hot weather. As recently as June of last year, Dr. C. J. McCartie, Lieutenant-Colonel, Indian Medical Service, published a most important article in the *Indian Medical Gazette* showing that the dress of the soldier is to a large extent responsible for fatalities from sunstroke. Every workman in the world except the soldier practically strips to his work. Planters and others rationally clad are able to work in the sun at a temperature often approaching 120° F., but soldiers succumb at a temperature twenty degrees lower. In hot weather dooly bearers carry as much as 64 lb. weight without inconvenience, whilst soldiers in the ranks, carrying 30 lbs., are prostrated by the heat. The belts and straps of the soldier exercise a most pernicious effect in preventing evaporation from the body.

At the Royal Institution Dr. Macfayden delivered a most interesting lecture on "The Effect of Physical Agents on Bacterial Life." He said that with a suitable soil and temperature bacteria are propagated rapidly, but in the absence of these they do not multiply, remaining quiescent or dying. The surface layers of the soil are the great natural storehouse for bacteria. In the air the physical conditions are unfavorable. Direct sunlight is deadly to bacteria; diffuse light is also injurious. Recent experiments at the Royal Institution show that bacteria are much more sensitive to high than to low temperature. A typical series of bacteria was exposed to the temperature of liquid air (about 190° C.) and to the temperature of a liquid hydrogen (about 250° C.) without any impairment of vitality. Fresh growths obtained from the exposed tubes were normal in every respect. The temperature of 250° C. is only twenty-three degrees above the zero of absolute temperature at which, according to our present theoretical conceptions, molecular movement ceases, and the entire range of physical and chemical actions with which we are acquainted will either entirely stop or assume an entirely new *rôle*. The fact, then, that life continues to exist under such conditions affords new ground for reflection as to whether all life is dependent for its continuance on chemical reactions. Biologists will, therefore, follow with the keenest interest Prof. Dewar's heroic attempts to reach the absolute zero, as upon his success may rest a settlement of the vexed question of vitality and the gaining of further insight into the mystery of life.

An important judgment has been given on the question of the liability of hotel proprietors in cases of ptomaine-poisoning from the food served. In July last some forty persons suffered from poisoning after dining at the Inns of Court Hotel. Among those who suffered, a Mr. Smith and his wife brought an action for damages. Mrs. Smith was taken violently ill on the following

morning with symptoms of gastric irritation. Mr. Smith went to business as usual, but about noon was seized with symptoms similar to those of his wife. The medical attendant diagnosed ptomaine-poisoning. Mrs. Smith was seriously ill and a trained nurse had to be obtained. Her husband was not so ill and after four days had sufficiently recovered to go to the seaside. The plaintiffs claimed damages from the hotel company on the grounds of negligence in preparing the food. The defence was a denial of negligence. A verdict of £100 damages was obtained. An appeal was made against this verdict, the defendants admitting that the illness was caused by the food taken, but asserting no negligence or carelessness of their servants had been proved. In spite of the most careful investigation, it was impossible to say which of the many dishes of the menu was the one which contained the poison. Meat might be tainted with bacterial matter and yet no amount of care might be sufficient to ascertain the fact. Every one of the sufferers had eaten either fish or mutton. The judges held that if proper care had been exercised by the *chef* the condition of the fish and meat would have been discovered and they dismissed the appeal with costs.

At the Polyclinic Mr. Jonathan Hutchinson showed a case of recovery from leprosy, remarking that he would use the term "cure" but for his awe of certain captious critics, for the patient had permanent anesthesia of the hands and, to a less extent, of his feet. All evidence of active leprosy, however, had been absent for six years. The words "cure" and "recovery" meant cessation of disease processes, not absolute restoration to normal condition. He mentioned another case of a florid, healthy-looking man quite blind from leprosy, whose hands were to some extent helpless from anesthesia and muscular atrophy. But for fifteen years he was free from aggressive symptoms. In the first case mentioned when the patient came under treatment he had patches on the arms and legs, enlarged ulnar nerves and dusky hands and feet from passive congestion. The treatment consisted in small doses of arsenic, liberal diet, and abstinence from fish. In about eighteen months all traces of patches had disappeared from his hands and feet. From that time unusual slow restoration progressed, the hands became less dusky and somewhat less numb, and the ulnar nerves smaller. The patient enjoyed good health except that he suffered from dyspepsia. As long ago as 1870 Mr. Hutchinson published a case of recovery from leprosy. A woman returned from Barbadoes with leprosy in the most severe form—the tubercular. In the course of years whilst residing in England, she recovered, but her hands remained numb and crippled. She was enjoined to abstain from fish. Mr. Hutchinson since then has seen many cases of recovery of lepers who have come from abroad to reside in England. The same observation has been made in America as to Norwegian lepers. Mr. Hutchinson attributes the fact that little or nothing has been heard until lately from leper establishments as to recovery to the fact that fish has been an important element in the dietary. Quite recently Norwegian authorities have asserted the curability of leprosy. Dr. Hansen has seen many cases, principally of the anesthetic form but a few of the tubercular. In some a necropsy failed to reveal the bacillus in any viscus.

OUR PARIS LETTER.

[From Our Special Correspondent.]

PARIS, June 27, 1900.

THE BUBONIC PLAGUE—THE CONVENTION OF VENICE (1897)—A POET'S NAME GIVEN TO A PATHOLOGICAL SYMPTOM—ALCOHOLISM IN THE FRENCH ARMY—THE NEW SANATORIUM OF GORBIO.

EUROPE at present feels no little apprehension as to the possible spread of the bubonic plague, and it must be admitted that changes are taking place in the East as to means of transportation, which will tend to render more difficult the task of quarantine. The Conference of Venice prescribed certain regulations which have so far protected Europe in a great measure, but recent occurrences, such as the epidemic at Oporto, the rumor of an outbreak in Algeria, and the recent epidemic at Port Said, where about twenty deaths have already occurred, show that new measures must be found to cope against this danger. A recent article by Dr. Lochelongue, Quarantine Officer of the International Service in Egypt, shows wherein the new conditions render ineffectual the present rules of quarantine. Railways which are being constructed in Asia Minor and in Arabia will destroy the importance of the Suez Canal as a sort of filter to protect against the spread of the disease. A railway has been constructed from India to Afghanistan as far as Chaurau, and the Russians have already advanced as far as Kouchk. The distance between these two points is not great. When the new railway lines from Constantinople toward the Far East are finished the regulations adopted at the Venice Conference will have to be modified. The classification of ships is at present faulty. All that is requested of a ship coming from an infected port is that there has been no death on board since sailing. This is hardly sufficient, as the rats may be already infected and may spread the infection amongst the passengers just before arrival. Moreover, a port is no longer supposed to be contaminated after ten days have elapsed since a death or a new case has occurred. This is quite inadequate, as the rats or mice may still be suffering from the disease and will infect a ship leaving such a port. To get over the difficulty of taking passengers or merchandise from an infected port, a new device has been found. The cargo and passengers of a ship coming from Bombay, for instance, are put on board a ship coming from another non-infected port. In this way, although the whole trip may not have lasted

ten days, the passengers are able to pass though Suez. Upon the outbreak in Port Said a certain element of the population tried to obstruct investigation of the medical officers. It was thought at first that some mistake might have been made, but one is obliged to admit the facts as they stand.

It is quite a distance from poetry to medicine, and yet one of the well-known physicians of the Paris Hospitals, Dr. Delpeugh, has applied the name of Alfred de Musset, the celebrated author of "Nuits de Mai," to a sign of aortic regurgitation. The latter consists in synchronous movements of the head corresponding to the pulse. This sign was noticed by Paul de Musset, brother of the poet, fifteen years before his death from valvular trouble. It is also observed in aneurism of the aorta.

The Italian Minister of Public Instruction has decided to create a professorship of urinary diseases in the faculty at Rome, and offered the position to Professor Posner of Berlin. The latter declined, however, to accept the position.

The Minister of War, General Gallifet, has just addressed a circular to his subordinates in which he has ordered that inside military quarters no liquors should be sold, nor any of the preparations known under the name of apéritifs. This is an excellent measure, but, unfortunately, the Minister of War can do nothing outside the barracks, and plenty of beer saloons and liquor establishments are to be found a few steps from the latter. Everything shows that people are at last awakening in France to the fact that alcoholism is increasing rapidly, and that it must be stopped or the nation will be affected seriously thereby.

The new sanatorium of Gorbio near Mentone has just been opened. It is situated 250 meters above the level of the sea and is most admirably constructed according to the recent principles of hygiene. It contains 53 rooms and is under the charge of Dr. Malibrau, a well-known practitioner of Mentone.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

CERVICAL GASEOUS TUMOR—RETROVERTED GRAVID UTERUS—ORBITAL OPERATIONS—SPINAL ANESTHESIA—FORMALDEHYDE IN GRIP—OPERATIVE ASEPSIS—GASTROSTOMY—RENAL TUBERCULOSIS CYSTS AND FIBROIDS—CIRRHOSIS OF LIVER WITH SPLENIC INVOLVEMENT—STATIC ELECTRICITY.

AT the Surgical Society meetings, held in Paris from March 28th to April 18th the following case came under notice. GUINARD presented a young woman, thirty-two years of age, with the following history: Excellent general health, no occupation causing straining, no family and no remote personal taint, no swelling of the neck observed until during a violent coughing spasm she felt something "crack" near the trachea. A few days later she noticed on the right side of her neck a small swelling, which grew slowly at first and then remained quiescent for eighteen months. When first seen it was the size of a mandarin, in the infraclavicular triangle, skin normal and non-adherent, uniform surface, elastic, firm, slightly movable beneath the skin and on the deeper structures, evidently not incorporated with the latter, although irreducible, tympanitic above, duller below; auscultation negative. On ablating the tumor the sac was so delicate that it ruptured and evacuated gas and a thin yellowish fluid. Enucleation was easy down to a thin fibrous band running to the trachea. Histologically the wall was a thin membrane lined by a single layer of epithelium, columnar. No cilia were found anywhere.

In discussing the pathogenesis Guinard recognized the presence of the factor usually entering into such cases, namely, the violent coughing strain, and the absence of the other element commonly present, *i. e.*, a trachea weakened by preceding disease or congenital anomaly, because this case lacked proximity to, or direct communication with, the trachea or the air-passages. He was inclined to regard this as the analogue of pneumothorax after strain, so well known. Under the violent effort the trachea may have parted and the escaped air, instead of becoming absorbed, was encysted. Such an encapsulation of air is common enough. Guinard narrated another case in which it was introduced by a hypodermatic needle and remained unabsorbed for eight days. Pure and simple ablation appears to be the sole treatment.

QUENU considered it necessary to establish the growth of a cyst-wall before this hypothesis could be accepted. He has also been obliged to incise for air injected beneath the skin.

MOXON remarked that the existence of the epithelium and the papillæ in the membrane lining the cyst proved that it had a congenital or anatomical precedent existence. Its separation from the trachea did not prove that a communication had never existed. BROCA and BERGER agreed with this opinion.

RECLUS had for twelve years followed a patient who was aphonic, due to a cervical tumor. Without known cause the mass suddenly vanished and the voice returned. No relapse has occurred.

DELBET pointed out that there are two classes of cervical gaseous tumor, one due to abnormality, the other to rupture of an air-passage. This case certainly belonged to the former, as the histological examination showed. In one of his patients tuberculous ulcers of the larynx gave a tumor which varied with strain between absence and presence and small and large size.

PINARD, at the meeting of the Académie de Médecine, held May 29th, read a report of a case of irreducible retroverted gravid uterus incarcerated by adhesions and tumors of the adnexa. In connection with two cases previously reported by Mouchet in which laparotomies were done and full term delivery followed, he

stated that the following treatment will be usually efficacious: First free evacuation of the bladder and rectum, careful diagnosis of the cause of the obstruction, then slow gentle manual replacement. When this fails a balloon may be passed into the rectum and slowly inflated. As a rule the uterus will then spontaneously return to its normal position. Should tumors in the pelvis or adhesion still resist, a laparotomy for direct removal of the cause and reduction of the displacement is indicated. Often a vaginal operation may be successful, especially should it be first resorted to if the bladder has been damaged by pressure.

Valude reported three entrances into the orbital cavity by the temporal approach method of Krönlein—with the advantage usually of leaving the globe in situ. The steps of the operation are a curved incision, curve anteriorly, tangent to the outer orbital margin and the zygomatic arch, elevation of the periosteum within the orbit over its entire temporal wall, division of the bone by two incisions meeting in the sphenomaxillary fossa, retraction of the bone and skin-flap, thus exposing widely the entire orbital cavity contents. Mere suturing of the skin supports the bone-flap properly and prompt recovery is the rule.

Tuffier showed several patients upon whom spinal anesthesia had been successfully practised for operation.

De Lamaleree (Varennes) stated his success with formaldehyde inhalation as a curative and prophylactic measure in grip.

At the meeting of the Société de Chirurgie, held May 23d, Rochard took issue with Quénu that rubber gloves should be worn in all operations. He claims that it is sufficient to reserve them for purulent operations, because in general many procedures requiring a delicate touch are hindered by them.

Terrier said that for a long time he had felt constrained to attend to asepsis rather than antiseptics. As to the sterilizing of the hands he added that after infection from an autopsy or a purulent case this did not appear to be possible with antiseptics. Again, in a series of observations and experiments he had demonstrated the impossibility of keeping the hands sterile throughout an operation. For this reason he scarcely believes in the use of gloves, which might act as a means of encouraging the germs at the skin-level and which always hinder operative facility.

Monod presented a patient who nine years previously had undergone gastrostomy, without any leakage of gastric juice at any time. He had been obliged to satisfy himself with a trocar puncture of the organ without suture of the mucosa to the skin.

Quénu said that mere stitching of the skin and mucosa make hardly a better opening than the puncture with the trocar. He usually incises the organ with a tenotome and then brings the mucosa and skin together. He also makes a slight recession of the part brought to the skin, so as to make a kind of intraparietal esophagus.

Tuffier said that an experience of nine years had more and more convinced him of the need of surgical intervention in tuberculous kidney. Concerning the diagnosis of the function of the opposite kidney, he thought ureteral catheterism is not always necessary. To know the exact state of this kidney a twenty-four-hour specimen must be collected; but it is certain that the retention of a catheter for so long a time is not without inconvenience. On the other hand, it is sufficient to have found the urine normal after several examinations. In general the number of patients on whom ureteral catheterism is necessary is certainly restricted, governed by the fact that one can not consider this method of examination without pain and damage. Tuberculous pyonephrosis he usually treats in two stages, first, nephrotomy and free drainage; second, nephrectomy. As to ablation of the whole ureter, he felt that this is necessary in certain selected cases but not in all.

Monod mentioned a case of associated broad-ligament cyst and pedunculated uterine fibroid, removed at one time. He criticised as unwarranted the fear formerly expressed by surgeons of treating such cases. The comparative benignity of hysterectomy, especially if a stump of the cervix is left, is now a feature of modern surgery.

Gilbert at the meeting of the Société Médicale des Hôpitaux held May 25th, discussed a type of cirrhosis of the liver accompanied by hypertrophy and discoloration of the spleen, while the liver itself might not be much enlarged. Previous to his researches several other authors had published facts which may be in accord with his own view. Hanot, who cast the first light upon this confused group of diseases, did not seem to recognize this type by its lesions of the spleen, as may be proved by noting his omission of the spleen in his thesis and monograph of 1892; nor did he, on the other hand, establish the diagnosis of his form of cirrhosis without lesion of the spleen proper, such as the disease of Banti. In the class of cases under discussion the chief symptoms are jaundice and hypertrophy of the spleen, whereas in Harnot's patients they are enlargement of the liver and jaundice. More recently Popov, Kirikov, Boix, Boinet, Chauffard and others have attributed to lesions of the spleen and ganglia either predominence over, or priority to, those of the liver. Again, Hayem and Levy have recently differentiated a clinical chronic infectious icterus with splenic discolorations and paroxysms. Landrieux and Milian have also made recent observations. The frequency of this disease is about equal to that described by Hanot. Early life, infancy and adolescence seem to predispose, while sex and the great infectious diseases (tuberculosis, syphilis, malaria), acute and chronic, and chronic intoxication (especially alcoholic), do not have any influence. Intense prolonged digestive troubles appear as the sole cause in most cases. The usual

onset is very obscure and occurs in one of three forms. *Gastro-intestinal type*: Anorexia, vomiting, diarrhea, accompanied or not by diffuse abdominal pain and preceded for a long or short time by hepatobiliary signs. *Hepatobiliary invasion:* Jaundice, at first slight, shortly increasing regularly, discomfort or pain in the right hypochondrium, and early apparent enlargement of the liver. At times a veritable acute angiocholitic attack with fever marks the onset. *Splenic onset:* Discomfort and pain about and enlargement of the spleen appear to precede the signs from the liver. One must admit that here the disease does not proceed from but appears to show its first symptoms in or about the spleen. The period of establishment is slowly reached and shows persistent jaundice and an enormous splenic hypertrophy. There is deformity of the upper zone of the abdomen (*splenic belly*), a defined, enormous, smooth, hard mass in the left hypochondrium descending to the mid-line in the umbilical region. The spleen is usually not tender, but there may be attacks of discomfort, tenderness and pain (*splenic crises*). The liver descends a few finger-breadths below the rib-border, is hard, not sensitive, uniform, smooth; sometimes without subjective symptoms, sometimes the site of trouble (*hepatic crises*). The disproportion between the size of the spleen and liver gives the great peculiarity of the disease. The liver functions are early hyperactive or perverted, later deficient. The persistent jaundice goes with hyperbiligenesis; glycogenesis and ureogenesis vary and may be exaggerated. The urine remains normal in quantity, contains bile-pigment but no sugar and no albumin. There is the series of troublesome symptoms which go with any chronic jaundice. Two exceedingly significant negative facts are the absence of ascites and collateral circulative symptoms. Often deformity of the fingers and certain joints (wrist, knee, arch of the foot) appears. In short, in the young development is arrested, puberty delayed and they become lean, lank and infantile. In its evolution and duration this form of cirrhosis resembles all others and its cause seems to depend on some obscure infection ascending from the intestine. Some think the spleen and the ganglia are first attacked by the disease which travels thence to the liver, chiefly through the splenic vein. One can conceive that such a condition might cause a venous but not a biliary cirrhosis. The frank hepatic début, the frequent acute attacks in some cases, the arrangement of the lesions, all plead a liver origin. Finally, it is important to recognize this type of disease for clinical and diagnostic reasons. It differs from cirrhosis of splenic origin (like the disease of Banti), in the absence during its development of a purely splenic stage, in the importance of the hepatobiliary symptoms, and in the grouping of the lesions as a biliary and not as a venous cirrhosis. It is distinguishable from the type of Hanot by the enormous disproportion which exists between the volume of the liver and spleen and the splenopathic aspect. But these resemble each other in the arrangement of the lesions and the mechanics of their production.

CHAUFFARD believed it contrary to facts not to admit the priority of splenic lesions in certain cases of cirrhosis. Indeed, not only is there a disproportion between the liver and splenic lesions, but often the former may be actually or apparently absent. He agreed with Gilbert in the existence of some intestinal source of infection.

YVON at the Société de Biologie on May 26th stated that numerous observations on the urine, urea, phosphates, respiration, circulation and temperature, have led him to think the influence of static electricity on the living normal organism much exaggerated and probably non-existent.

REVIEWS.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., and CHARLES ADAMS HOLDER, M.D. Volume II., June, 1900. 8vo., 401 pages, with 81 Engravings. Lea Brothers & Co., Philadelphia and New York, 1900.

MEDICAL men who have been following carefully the series of volumes of "Progressive Medicine" can scarcely fail to be struck by the fact that now, in its second year, each new volume retains all the interest of the volumes of the first year. It is not difficult to write a review of any special branch of medicine when one has the advances made in a series of several years from which to cull. But when a reviewer is limited to a single year then interest is apt to wane; padding takes the place of matter of practical importance. This objection certainly does not hold in "Progressive Medicine." It is the livest review of the various specialities in the range of the medical sciences that comes to our table. The present volume contains the surgery of the abdomen, including Hernia by Dr. William B. Coley; Gynecology by Dr. John G. Clark; Diseases of the Blood and Diathetic Diseases by Dr. Alfred Stengel, and Ophthalmology by Dr. Edward Jackson.

Dr. Coley's review of abdominal surgery is eminently replete with practical suggestiveness. The keynote of the present position of abdominal surgery is struck by these words quoted from Lennander: "The first essential in order to save a large number of patients suffering with severe abdominal symptoms is that we physicians cease to believe that it is our first duty in these cases to relieve pain. On the contrary, we should from the character of the pain form a diagnosis, the important part of which is, 'In this case we should operate immediately,' or 'In this case we should not operate, at least not immediately.' If we begin with a large dose of morphine, or with

hot compresses we delude the patient with hope which in the majority of cases rapidly disappears when the distention of the abdomen denotes the presence of a diffuse peritonitis." The question of drainage in appendicitis is very thoroughly discussed. As might well be expected from Dr. Coley the chapter on hernia, while concise, is admirably complete. Surgery of the liver, the newest phase of abdominal surgery, receives the attention it deserves. The question of diagnosing the presence of calculi in the various abdominal organs by the X-rays is very thoroughly illustrated by plates of Abbé, Olbarran, Gochy, Davidson and Leonard.

In gynecology Dr. Clark has a most interesting review of the use and abuse of normal salt solution. Dr. Clark's own opinion is that the more extensive a surgeon's experience with the use of normal salt solution as a stimulant in abdominal operations, the more convincing is the evidence in favor of the great benefits to be derived from it. There is a very interesting discussion of the production of sterility through excision or ligation of the Fallopian tubes. The treatment of movable kidney, while handled from the standpoint of a professedly operative gynecologist, is touched with a moderate conservatism that is very commendable under the circumstances. The use of a bandage, of rest in bed for some weeks, of massage of the abdominal muscles, and of constitutional treatment, are given due weight as important and often wonderfully successful remedial measures for this condition.

Dr. Stengel's review of diabetes is one of the features of the volume. Within the last two or three years we have come to realize that diabetes is much more frequent than was formerly thought and that mild forms of the disease form the basis of many obscure trains of symptoms utterly inexplicable if the diabetic element in the case be overlooked. Diabetes then receives the place that it deserves in the review of the year's medicine, some thirty pages being devoted to it. Dr. Stengel's very thorough and practical knowledge of recent medical work on the blood makes his review of the blood dyscrasiæ not only most interesting but very helpful and suggestive.

Diseases of the Gall-Bladder and Bile-Ducts, including Gall-Stones. Second Edition. By A. W. Mayo Robson, F.R.C.S., assisted by Farquhar Macrae, M.B., C.M. (Glas.)

Monographs are more and more recognized as the ideal works for the practitioner's library, as they are more apt to contain full recognition of the various phases of each variety of the diseases discussed and a review of cases. Both of these features are well in view throughout this work. The table of contents at once shows the systematic, painstaking outline laid down, and at the head of the chapters the necessary subdivisions are carefully arranged. Reference is, therefore, both rapid and accurate. There is also a long list of epitomized case-histories illustrating almost any important point desired. Gross and minute pathology receive their due attention amplified by good plates. The subject matter reads clearly and easily and, although nothing is neglected, the book is of very convenient size. This is certainly deserving of a place in the library of any one needing a first-class work on the subject.

Histology and Pathology. A Manual for Students and Practitioners. By John Benjamin Nichols, M.D., Demonstrator of Histology, Medical Department Columbian University, Washington, D. C., and Frank Palmer Vale, M.D., Assistant in Pathology, Medical Department University of Georgetown, Washington, D. C. Illustrated. New York and Philadelphia: Lea Brothers & Co.

This small book is an attempt to summarize all the essential facts relating to the normal histology and the pathological anatomy and histology of man in a systematic and concise way. The aim of the authors has been to make this a manual which would appeal to both students and practitioners of medicine. In the four hundred and forty pages devoted to this task, the results of the most recent investigations have been considered in their proper relations; a discussion of unsettled points has wisely been omitted in a book of this kind. The value of the book is further enhanced by the excellent selection of many illustrations; the majority of these are selected from the works of other investigators, but the selection has been done with the greatest care and success.

Dr. Nichols has been very fortunate in the good arrangement of his part on normal histology; the part on general and special pathology by Dr. Vale is equally good. The chapter on inflammation is to be particularly commended; the point of view in this section is from that of recent tendencies. The authors have never failed to have in view the relations of their subjects to practical medicine. In its ensemble the book will undoubtedly meet a fitting recognition from a large class of readers.

Essentials of Surgery. By Edward Martin, A.M., M.D. W. B. Saunders, Philadelphia. (Saunders Question Compends, No. 2.)

One is often amazed to see how little space is required to handle well for the purposes of review the vast subjects of medicine. Such a book is this compend. The popularity of such works shows that they have a definite field, although as substitutes for good treatises they are rather questionable ventures. This one is of the fuller and better prepared class. The new matter, especially on appendicitis, is valuable and the list of good prescriptions and suggestions, surgical and medical, set forth in the appendix is certainly an admirable feature.

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ORIGINAL ARTICLES.

TENDON TRANSPLANTATION IN THE TREATMENT OF DEFORMITIES OF THE HAND.*

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ALTHOUGH the operation of tendon transplantation was first proposed by Nicoladoni, in 1881, when he successfully attached both peronei to the tendo Achillis in a case of paralytic talipes calcaneus, it is only during the past five years that it has attracted much attention and become one of the recognized methods of treating paralytic deformities.

Many surgeons have reported their results in operations on the feet, but few cases are to be found in which the tendons have been transplanted for the relief of deformities of the hand. The relative infrequency of poliomyelitis of the upper extremities partly accounts for this discrepancy, but there are many patients suffering from drop-wrist, from distortion of the fingers and hand due to cerebral palsies of childhood or to poliomyelitis or cerebrospinal meningitis, whose deformities could be entirely done away with and who could have more or less complete restoration of function if this operation were done. Other conditions suitable for the procedure are contractures following cerebral lesions later in life, injuries to the nerves and subsequent paralyses of the muscles, deformities due to muscular action or instances of severed muscles where their power is lost and the cut ends cannot be found or cannot be reunited.

The term, tendon transplantation, is the one used by most authors, but others prefer to designate the operation as tendon grafting, tendon anastomosis, tendon suture, or function transference. In a review of the literature the following cases have been found:

Case I.—Bernhard[1]. Male, thirty-five years of age. Fell through a glass skylight and received a severe cut of the hand. Made a good recovery, except that stiffness and inability to flex the index finger remained. To relieve this an incision was made over this finger. The peripheral end of the sublimis could not be found. The flexor profundus was found cut close to the bone at the base of the first phalanx, its stump contracted within its fibrous canal; the central end could not be found. By splitting this fibrous canal the peripheral stump was freed and the profundus tendon was drawn out with an artery clamp and fastened to the extensor indicis, which was brought forward by making a tunnel at the metacarpal joint close to the bone. The tendons were united by making a slit in the profundus stump, drawing the extensor through it and then suturing both tendons together with silk. The external wound was closed, and the finger put in flexion. Both wounds healed *per primam*. Dressings were removed on the tenth day, and attempted movement of the finger reopened the skin. This, Bernard thinks, was due to preoperative trophic disturbances of the skin. The tendons, firmly united, could be seen through the skin opening. Operation proved successful in spite of this reopening, although the exact condition is not given.

Case II.—Franke[2]. Complete cerebral radial paralysis of the right hand, which was held in flexion and absolutely without function. Incision made on ulnar side of forearm. After the flexor carpi ulnaris had been divided, its central end was brought around and fastened to the peripheral end of the extensor carpi ulnaris which had also been cut across. The wound was closed and the hand fixed in hyperextension. Suture material used was catgut. On account of its early absorption the skin reopened, the tendons, however, remained perfectly united. To close the skin opening silk sutures were used. Wound healed *per primam*. Operation was unsuccessful in that there was only a minimum amount of extension afterward and the deformity soon returned.

In a second operation on the same individual, Franke decided upon transplanting the supinator brevis because there was a slight amount of supination present. On examination it was found so atrophied that the plan was abandoned. Instead, the tendon of the extensor carpi radialis longior was shortened; but, the surgeon not being satisfied, a third operation was done in order still further to shorten the tendon. This was followed by a complete motor paralysis of the forearm due to the fact that the Esmarch bandage was left on for several hours after the operation, but finally the arm was not only completely restored to its former position, but showed marked improvement of the radial paralysis. The hand was somewhat over extended and the motion was very good.

Case III.—Franke. Motor paralysis of the shoulder, arm, forearm and hand: an operation was done to improve the radial paralysis. The extensor carpi ulnaris was divided and the central ends sutured to the common extensor of the fingers at the point where it subdivides. Result fairly good.

Case IV.—Keiler[3]. Male, eighteen years of

* Read before the American Orthopedic Association, Washington, May 1, 1900.

age. Old hemiplegia, paralysis of the extensors of the hand. Function of the thumb and little fingers retained. Tendon of the extensor carpi radialis was sutured to the tendon of the extensor communis digitorum. Result fair.

Case V.—Kirsch[4]. Traumatic cut of the extensor brevis pollicis; the peripheral stump was united to the extensor carpi radialis longior. Result, recovery of the extension of the thumb. This operation was done with infiltration anesthesia.

Case VI.—Rochet[5]. Female, aged nine years. Deformity following poliomyelitis, paralysis of the abductors of the wrist and thumb. Operation consisted of an incision over the ulnar border of the forearm about eight centimeters in length extending down to the wrist. The flexor carpi ulnaris was divided near the pisiform bone and the extensor carpi radialis near its insertion; by dissecting back on the dorsal surface the extensor brevis pollicis and the abductor pollicis were freed and after their sheaths had been opened the central stump of the extensor carpi ulnaris was fastened to them. The hand was placed in radial abduction. A successful restoration of function resulted.

Case VII.—Rochet. Boy, aged fourteen years. Infantile paralysis of right arm and hand. The fingers were held firmly flexed, no extension possible, except in the ring finger and thumb. No adduction or abduction of the thumb, but the latter was held against the second metacarpal bone. A median incision was made on the back of the hand from the wrist to the middle of the forearm. Muscles were cut and an endeavor made to utilize the extensor power of the ring finger and thumb for the other fingers by suturing the following tendons by their lateral borders: (1) The tendon of the extensor brevis and abductor pollicis; (2) the extensor longus pollicis and the extensor indicis; (3) the tendons of the middle and little fingers to the tendons of the ring finger, thus endeavoring to make all the dorsal tendons act in groups of two or three. Three and one-half months after operation the little and index fingers could be voluntarily extended. The middle finger was unimproved, there was slight abduction of the thumb.

Case VIII.—Rochet. Male, aged fourteen years. Right plastic hemiplegia. Hand and fingers held flexed to an acute angle. Median incision on dorsal surface of the forearm above the wrist twelve centimeters long. The extensors of the fingers and the extensors of the wrist were divided six to seven centimeters above the joint. A median palmar incision was then made and, after dividing the superficial flexors, an opening was made in the interosseous space and the central stumps of the flexors were brought through and sutured to the peripheral stumps of the flexors. Five months after operation the hand was in line with the forearm, there was extension of the fingers with the exception of the thumb, which was only restored within moderate limits.

Case IX.—Roget[5]. Patient aged thirteen years; sex not given. Paralysis of the extensors and of the abductors of the right thumb. An anastomosis was made between the peripheral end of the long extensor tendon and the extensor of the index finger which was cut just above the upper edge of the "anatomical snuff-box." Result good. Patient could write and make movements impossible before, and when extension of the thumb was made, extension of the index finger occurred at the same time or *vice versa*.

Case X.—Mueller[6]. Male, had lost the use of the forearm as the result of a fracture of the humerus in which an unsuccessful operation had been done to free the callus after which tendon suture was resorted to. Prior to examination electrical examination showed reaction of degeneration, but the direct irritability of the extensors was not entirely lost. Two and one-quarter years later electric irritability of the muscles of the forearm supplied by the radial nerve was lost completely.

An incision six centimeters long was made on the ulnar side of the forearm above the wrist, the flexor carpi ulnaris exposed and cut close to its insertion and brought above the styloid process of the ulna to the dorsal side. All of the extensors of the fingers and the extensor carpi ulnaris were then cut and united with catgut to the flexor carpi ulnaris, the hand held in extension. Healing was delayed owing to some of the catgut ligatures. At the end of three months improvement was very slight, but, despite the fact that no further treatment was given, the function of the hand steadily improved until seven months after the operation the thumb could be extended, but not abducted, and motions of extension of the hand were possible. Three months later the strength of the hand had increased and the thumb and index fingers could be voluntarily extended separately and in connection with the other fingers. The one difficulty was that in extending the hand was pulled to the ulnar side. To improve this and also replace the abductor pollicis the following operation was done:

The flexor carpi radialis was freed but not cut; its lateral edges were freshened and united to the tendons of the abductor pollicis and the extensor carpi radialis longior. The hand was held extended and turned toward the radial side. Improvement was noticed within six weeks after the operation. The thumb could be abducted by the action of the flexor carpi radialis longior which turned the hand toward the radial side, a condition which was afterward entirely overcome. Several months after the operation the patient could extend the fingers and was able to use the hand for various purposes.

Cases XI. and XII.—Tubby[7]. An incision three inches in length is made in the middle of the forearm as for ligature of the radial artery. The inner edge of the supinator longus is rapidly defined, and beneath it the radial artery and nerve. The latter structures are drawn inward and the distal part of the pronator radii teres is separated from the surrounding muscles and fas-

cia. Its tendon is then removed from the radial attachment, care being taken not to remove the periosteum. The pronator radii teres is then held aside and an opening is made into the interosseous membrane just internal to the inner border of the flexor longus pollicis. An aneurism-needle is then passed behind the radius from without inward and as close to the bone as possible; a sufficient space is made for the passage of the tendon of the pronator radii teres, and the aneurism-needle is left with its eye towards the ulna. The tendon of the pronator radii teres is then transfixed with silk of medium thickness, in the form of a Staffordshire knot leaving two free ends. The ends are passed through the eye of the aneurism-needle, and by traction on it the tendon of the pronator radii teres is brought around the radius. The ends are now utilized in the following way so as to secure the tendon to the bone. They are rethreaded on separate suture needles and the tendon is grafted thus to the periosteum. One suture is passed through the periosteum on the outer side of the radius above the transplanted tendon and the other passes through below. The two ends are then knotted together over the tendon. But I am disposed to think that it is better to work a drill through the bone from before backward and near the outer surface and then secure the ends through the aperture. This completes the first part of the operation.

The second part consists in dividing the tendons at the wrist. A transverse incision is made there, the median nerve is defined and protected, and the following tendons are divided; the flexor carpi radialis, the flexor sublimis, palmaris longus, flexor carpi ulnaris, and, if the thumb is strongly flexed and adducted, the flexor longus pollicis. Both wounds are then closed and dressed and the limb is put up with the elbow extended, the forearm supinated, and with wrist well flexed for eight days. From this time onward till the sixth week the angle of flexion at the wrist is gradually diminished until it is in a straight position. Here the limb should be maintained while the extensors and supinators are massaged and stimulated with interrupted current, care being taken to control the limb with a splint reaching from the upper arm to the fingers. The arm recovers its use very rapidly indeed.

I have now practised this operation in two cases with great success, and I find that in three months after the operation the patients could use the hands well and perform such fine movements as picking up a pin. If there is any hesitation on a child's part in using the limb it is well to tie up the sound arm and insist that he use the limb recently operated on.

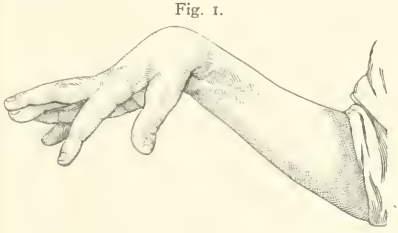
I desire to place on record three cases that I have personally operated on and, through the courtesy of Drs. Whitman and Gibney, to add two others.

Case XIII.—Male, aged seven years, admitted to the Hospital for Ruptured and Crippled, December 15, 1899, suffering from right hemiplegia, pes equinus, and drop-wrist. When sixteen months old had cerebrospinal meningitis, followed by paralysis of the entire right side, including face muscles, and also was unable to speak. He has had convulsions since then almost daily (*petit mal*). Before the meningitis the boy was bright, but now shows marked signs of mental deficiency. The foot is held in marked equinus with slight varus. The right arm is one and one-half inches shorter than the left. There is slight power in the extensor communis digitorum. The wrist is held at nearly a right angle with the forearm, and the flexor muscles of the wrist act; the flexion at the elbow is fair, although extension is limited to 130 degrees. The deltoid is atrophied and there is slight atrophy of the supra- and infraspinatus.

December 12th, operation on the foot by Dr. Whitman and the deformity perfectly corrected; plaster-of-Paris dressing applied. January 9th operation on the wrist by Dr. Townsend; incision 2 inches long was made over the dorsal aspect of the wrist just above the annular ligament. The extensor communis digitorus tendon was shortened as much as possible by overlapping; fastened with silk sutures; superficial wound closed with catgut. February 10th, dressing removed. Union *per primam*. The hand held in good position. The tendency to drop-wrist has been overcome, but the voluntary power has not been appreciably restored; part of this may be due to the fact that the boy cerebrates so slowly that it is impossible to get him to do anything. A brace is applied to hold the hand strongly extended. April 25, 1900, condition unchanged.

Case XIV.—Male, fourteen years of age. Referred by Dr. Sachs. Right hemiplegia, due to cerebral palsy of infancy. Instruments were used at the time of birth, but no damage apparently was done to the exterior of the skull. The patient has had treatment by electricity and massage and some years ago had his heel cord cut.

Fig. 1.



Case XIV.—Maximum Extension Before Operation.

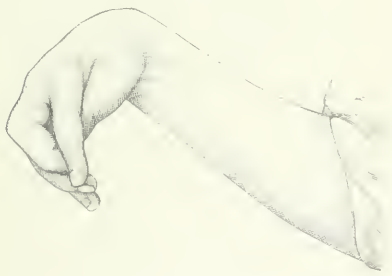
Has never been able to use the right hand and it is held in a typical position of claw-hand, it being sharply flexed at the wrist and the fingers flexed on the palm of the hand; the back of the hand is held nearly at a right angle to the forearm. By a voluntary movement he can extend the fingers slightly, but cannot extend the wrist.

Electrical examination of the right arm, De-

cember 20th, by Dr. Schlapp: Supinator longus, reaction slight, not enough to overcome the contraction of the pronators. Extensor carpi radialis longior et brevior, extensor carpi ulnaris and extensor of the thumb, no reaction. Extensor communis digitorum, no reaction to the electrical current; seems to react very slightly to impulse of the will. Flexors do not act as well as normal muscles, perhaps due to contracted condition. Flexor carpi radialis and flexor carpi ulnaris react. Flexor sublimis digitorum reacts but not completely. The anterior pair of its four tendons seems to react slightly. The posterior pair very slightly. Flexor profundus digitorum does not give a perfect reaction. The extensor muscles do not react when the nerve is excited. The flexor muscles do as a group.

It is difficult to get reaction of separate or single muscles, because a strong current is necessary to get any reaction, and then the reaction of individual muscles is marked. The circumference of the right hand is one inch less than that of the left.

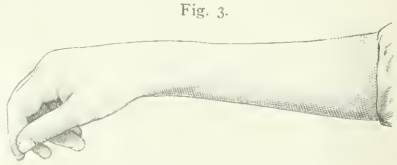
Fig. 2.



Case XIV.—Maximum Flexion Before Operation.

December 21st.—At the Polyclinic Hospital, under ether anesthesia, Esmarch bandage at elbow, the forearm and wrist having been cleansed thoroughly with green soap and bichloride dressing, all hair having been removed by shaving, an incision was made in the middle of the flexor surface over the wrist exposing the tendons. The flexor carpi radialis, the flexor carpi ulnaris and the palmaris longus were divided by scissors just above the annular ligament. Silk was stitched to each tendon and each fastened to an artery clamp, so that they should not draw up out of reach. The parts were then covered with sterile gauze, and the hand turned over and an incision made on the dorsum of the wrist; the extensor communis digitorum was exposed about one and one-half inches above the joint, the tendon being pulled to one side; dissection was made through the upper edge of the pronator quadratus and between the bones to connect with the flexors previously cut. These tendons were then slipped through, and to the extensor communis was attached the three flexor tendons previously mentioned. The lengthened extensor communis digitorum was folded on itself twice, so as to shorten it and between these folds the flexor tendons were stitched. The sewing was done with catgut. The wounds were then closed with catgut and dry dressings applied. The hand was placed in a hyperextended position and a plaster-of-Paris bandage applied. The wounds healed *per primam*, with the exception of one little spot on the flexor side where a suture pulled out, which granulated over and closed inside of ten days. All dressings were removed at the end of that time, the arm bandaged and placed in a splint, with a pad of gauze under the hand to keep it and the fingers in extension.

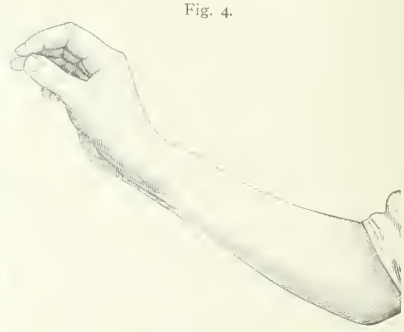
Fig. 3.



Case XIV.—Flexion After Operation.

The splint, etc., were removed at the end of six weeks, and the patient has simply carried his hand in a sling since then. The reason for so long delaying the removal of the dressings was to insure, as far as possible, perfect union of the sutured tendons. The hand is held perfectly straight in line with the forearm. The patient has power to extend and flex. He has fair grasp of the fingers; had none before, owing to the position in which the hand was held. When the electrical current is applied to the flexor carpi radialis, it is seen that a contraction occurs under the scar, on the dorsal surface of the forearm. In addition, the electrical current applied to the extensors gives better reaction than it did before the operation, owing to better position of the hand. Flexion and extension can be carried through an arc of about 20 degrees and I expect it is to be much increased by use, massage and electricity. April 29th, condition of the hand

Fig. 4.



Case XIV.—Extension After Operation.

much improved, is able to hold a pen and write his name in a legible way, can pick up objects with his fingers. Flexion of the fingers is increasing, and extension of the hand can be carried further than at the last examination. The hand is held in perfect position and there is marked increase in strength and better circulation; can flex fingers without thumb getting in the way, as it formerly did. Fig. 1 shows the greatest amount of flexion before operation; Fig. 2, the greatest amount of extension; Fig. 3, the greatest amount of flexion after operation; Fig. 4, the greatest amount of extension after operation.

Case XV.—Male, aged fourteen years, referred

Fig. 5.

Case XV.—Position of Hand Before Operation.

by Dr. Leszynsky. Admitted to Polyclinic Hospital, April 5, 1900. Right hemiplegia due to infantile cerebral palsy. The patient had a marked drop-wrist, the latter being held at an angle of about 90 degrees to the forearm, and the fingers flexed, contracted and firmly held in

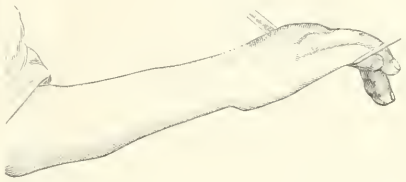
Fig. 6.

Case XV.—In Splint.

the palm of the hand. Electrical examination made by Dr. Schlapp. No contraction of the extensor muscles of the forearm, either to faradism or galvanism, even when irritation was applied to the musculo-spiral nerve. The triceps contraction was perfect. The flexor carpi ulnaris and the flexor communis digitorum both reacted perfectly to faradism; the flexor carpi radialis reacted, but in an imperfect degree. Position of the hand is shown in Fig. 5. The boy had no power to flex or extend the hand; slight power of flexion in the fingers.

April 5th, under ether anesthesia, the forearm having been thoroughly scrubbed and cleansed with soap poultice over night and washed with bichloride before operation, an incision was made 3 inches long on the radial side of the forearm, on the edge of the arm midway between the dorsal and palmar surfaces. The lower portion of the incision reached to the wrist; the skin was dissected backward, and the flexor carpi radialis and

Fig. 7.

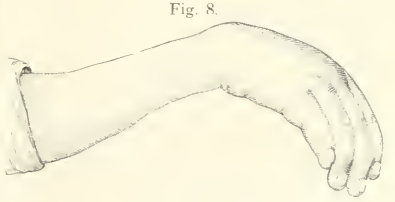


Case XV.—After Operation, Weight Partly Supported.

the palmaris longus were divided as close to the annular ligament as possible, and then dissected upward for a distance of about 3 inches. Dissection having been carried in the opposite direction to the back of the forearm, an attempt was made to fasten these tendons to the extensor communis digitorum. Just as they were being sewed in the slit of the atrophied tendon the latter tore through in such a manner that it was not possible to attach them. Therefore, the deep extensor was drawn upward, a slit made through it, both tendons drawn through, and then, at a point $\frac{1}{4}$ of an inch above, drawn through again, having previously been scarified.

The wrist at the time was held in a position of extreme extension and the tendons were pulled down and fastened to the extensor tendon as near to the wrist as possible. The tendons were fastened with kangaroo-tendon and the skin-wound sewed with catgut in a continuous suture. The operation was much delayed by oozing, as the Esmarch bandage was not used. Sterilized dressings of dry gauze were applied, and the arm put up in a hyperextended position, and held there

Fig. 8.



Case XV.—Position of Hand After Operation.

by plaster of Paris. The highest temperature was reached the day after the operation, when it rose to 100° F., never going above 99° F. after that. The patient did not suffer pain, but there was marked swelling of the fingers for the first few days, although the color was always good and they were never cold. Dressings were re-

moved April 21st. Wound healed *per primam*, except for two small spots about the middle of the incision, in which the skin at the edge of the incision was dry, but black and necrosed, evidently due to pressure of the artery forceps which were used to grasp the skin in one instance where we desired to retract. Dressing of balsam of Peru applied and the arm placed on a board-splint, with a roller bandage under the hand to keep up the hyperextension, and the patient allowed to carry the arm in a sling. April 26th, the patient still has very slight swelling of the fingers and wrist. Color, temperature, and sensation normal. The dressings removed again today, the two necrosed spots still present, and have not yet separated from the tissue beneath. They are ¼ inch in length by ½ inch. Remainder of healing perfect. No attempt was made at motion of the wrist or fingers. Present position of the hand and arm on the splint is shown in Fig. 6. Fig. 7 gives the position with fingers lightly resting on string, as it is not desirable to have any effort to contract sutured tendons made. Fig. 8 shows the greatest voluntary flexion.

Case XVI.—Gibney. Male, four years of age, admitted to the Hospital for Ruptured and Crippled, January 11, 1900, for right hemiplegia, equinus and drop-wrist. Seven months ago the child had convulsions of the right side, including face, arm and leg. This lasted one month. His hand and arm became paralyzed and flexed; toe-drop still continues. There is great weakness in muscles of the arm and hand. Was taken to a dispensary and electricity applied. January 13th, right foot held in position of equinus. Able to extend it to 90 degrees, due to action of common extensor and tibialis anticus; flexor muscles good. Wrist held at an angle of 90 degrees to forearm. The sublimis digitorum has good power. Fair power in the extensor communis. January 16th, operation by Dr. Gibney. Incision 2 inches long over the extensor aspect of the wrist. Common extensor tendon exposed and loop taken in it, also one in the extensor longus digitorum and extensor longus pollicis. Sutured with No. 3 silk. Hand put up in hyperextension. February 10th, plaster removed from hand. No power of extension in wrist. Can extend fingers fairly well. March 31st, power in wrist has but very slightly improved, although the position is better.

Case XVII.—Whitman. Male, twelve years of age, admitted to Hospital for Ruptured and Crippled, August 4, 1899. When two years old the father noticed that the child's right side was partially paralyzed, but he never received any treatment. Examination August 5th showed that the child had right hemiplegia with drop-wrist and inability to extend the hand; also slight hemi-atrophy of the right side of the face. Marked atrophy and weakness of the right arm and hand. September 12th, under gas and ether anesthesia, an incision 2 inches long was made over the dorsal surface of the wrist; the extensor carpi radialis longior and brevior were cut and shortened as much as possible. The divided ends of the tendons were sutured together by means of silk. Wound closed with catgut, hand put up in hyperextension. Wound healed *per primam*. October 17th, incision on dorsal aspect of wrist, 2 inches long, over outer extremity of the right ulna and extensor carpi ulnaris was exposed and shortened as much as possible. To this shortened tendon was then fastened the flexor carpi ulnaris which had previously been divided. Hand put up in hyperextension. Wound healed *per primam*. April 27, 1900. Result is excellent. Patient is able to flex the fingers, flex and extend the wrist; although the hand is smaller than its fellow, it is very useful.

Vulpius[8] reports a case in which the flexor carpi radialis was made to perform the function of a flexor of the fingers. Several other cases are reported, but the details given are so scanty that it is not considered advisable to insert them. Vulpius[9] mentions in another paper that he has operated on three cases, but does not give the details. Hoffa[10] also reports three cases and gives full details.

The reports of these cases show clearly that we have at our command an operation which will do away with the necessity of physicians telling their patients that the best thing to do for a case of drop-wrist following a cerebrospinal meningitis is to amputate the arm, and that many patients who have heretofore been told that nothing could be done for their relief can be markedly relieved. The necessity for careful and thorough examination as to the condition of the various muscles prior to operation is a matter of considerable importance. We should ascertain whether they react to faradism and whether the reaction of degeneration is present or not. To get good results with restoration of function, it is advisable to suture only tendons that have power left; that is, if we expect these tendons to do any active work in the future. Of course, the tendon to which they are sutured is usually a paralyzed one, and the method of action is that the non-paralyzed shall do the work of the paralyzed one. Careful study of the various movements produced by the action of the muscles will tell us which tendons to transplant and to which they can be best attached. In addition, there is no reason why muscles should not be made to do work for which they were never intended, and by certain arrangements so fastened that their usual line of action shall differ from the normal. In rare instances a paralyzed muscle might be transplanted, the idea being simply to use it to hold the hand or fingers in a better position without any expectation of restoration of function. Asepsis, of course, is very necessary and if we have union *per primam* there should be no adhesions to interfere with the movements of the muscles. To close up thoroughly the tendon sheaths is very difficult and probably unnecessary. Several small incisions are better than extensive dissections.

The question as to the proper material to use

in suturing tendons seems to be of some importance, but all kinds of suture material have been used with success. Most operators use silk for the reason that it is less liable to be absorbed, more liable to hold, and easier to use. I personally have used silk, catgut, kangaroo-tendon and silkwormgut, and in every one of these cases perfect union has resulted. The skin wounds have all been closed with catgut, but this material, on account of its rapid absorption, is not recommended for fastening together the tendons.

The question whether to cut the muscles across entirely in shortening them is one that has usually been decided in the affirmative, but personally I prefer to lap the tendon so that in case of non-union we still have the original tendon left instead of a wide gap between the divided ends.

The method recommended of fastening the two tendons together is that of Goldthwait[11]; "The tendon to which the attachment is to be made is split and the end of the severed tendon, after it has been scored across to make the surface rough, is drawn through this slit and held by two quilted sutures. In this way both sides of the severed tendons become attached; and to offer a still greater area for adhesion the sutures are so placed that when tightened the outer tendon is spread out. The outermost suture is passed through both tendons and tied. The other is passed through the outer portion of the split tendon, then through the free tendon from an eighth to a quarter of an inch away from the edge of the first tendon, then through the posterior portion of the split tendon and then back in the same way. When this suture is tied it spreads the outer tendon."

In the last case operated on I not only passed the tendons through one slit in the other muscle, but, one and one-half inches below, passed it again through another, thus making two points of attachment. Sharpening or freshening the edges of the tendon that is to be slipped through is always advisable, and the slitting of the other tendon makes a raw surface with which it will unite. In Case XIV. the ends of the cut tendons were fastened between and to the other tendon which had been folded back on itself for the purpose of shortening it.

Whether the dressings should be removed immediately after the operation is questionable. Even if they are removed I believe that the hand should be held in a hyperextended position for at least six weeks, so as to permit a perfect tendon union, for the skin union must be more rapid than that of the deeper parts, and it is very important that the tendons sutured shall not be pulled apart. In my cases no motion has been permitted until six weeks after the operation and then motions were begun gradually: electricity and massage were used. Indeed, upon the subsequent attention paid the case the ultimate result will largely depend. We may operate successfully and yet if we leave the case at this point we have but half done our work, for the reason that the muscles must be educated in their new sphere of action and must be stimulated as far as possible.

Most of the operations so far done have consisted simply in dividing tendons that were too strongly contracted and fastening them to other tendons which were too long or paralyzed. Future operators, I believe, will somewhat modify this procedure. It is very essential that the tendons which are too long should be shortened before the paralyzed tendons are fastened to them. But I believe that our procedure in regard to the cutting of the tendons which produce the deformity will differ somewhat from what it has been. There is no reason why we should entirely destroy the utility of these tendons by cutting them loose from their attachments, because there are various methods of lengthening them,[12] and a tendon which sharply contracted, if lengthened, might still continue to act and a portion of its power might be given to another which does not properly act. In many of these cases the contractures are active and yet the muscles on both the dorsal and palmar surfaces of the wrist will act to faradism and voluntarily contract, but the hand is held so flexed that the power of the extensors is *nil*. Yet, if we divide entirely the flexors of the wrist, our future wrist flexion is done away with and can only occur secondarily after the fingers have contracted by the action of the deep flexors. In these cases it seems to me that it would be desirable to save at least one or more of the flexors. Whether the operative procedure will be to slip the tendons around the side of the forearm and fasten them together, or to pass them through the interosseous space, as has been done in one case reported by Rochet and in one of my cases,* can hardly be decided until more work has been done, but the slipping through the interosseous space is not difficult and is worthy of trial. Numerous points of this kind will only be decided by actual experience in a larger number of cases than are so far to be found in the literature.

The question of the future action of the muscle, that is, so far as the cerebral action is concerned, is an interesting one and will be solved undoubtedly by the neurologist or physiologist. The practical point is that, with the flexor tendons attached to the extensors, when the patient wishes to extend the hand, the cases already operated upon show that the proper motion results, although the extension is accomplished by contraction of flexor muscles.

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* At the time of the operation I was not aware that it had been done before, not having seen Rochet's article until three months later.

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SOME REMARKS ON THE ARTIFICIAL FEEDING OF INFANTS AND THE REGULATION OF THE MILK-SUPPLY IN THE COUNTRY.[1]

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In no branch of medicine or surgery has there been expended more patient laboratory work, research and clinical observation, than in pediatrics; and in pediatrics no subject has been productive of a greater effort or a more voluminous literature during late years than the study of nutrition and its disorders. This has been rendered imperative by the constantly-increasing number of infants nourished by artificial means. On the one hand we have the results of patient laboratory work from a purely scientific standpoint; on the other, the almost limitless array of proprietary foods in which commercialism holds more or less complete sway.

This is not surprising when we consider the immense importance of a proper artificial diet, the dire consequences of an improper one, and the complexity which is involved in the production of a proper food as adapted to individual cases. It must be noted that this work has been done by the comparatively few, by far the larger quota of the profession standing by showing scarcely interest enough to be regarded as awaiting results. The reasons for this attitude on the part of the majority are manifold, but the chief ones are, first, the inaptitude of many otherwise thorough and competent men for pediatric practice; and, second, the ever-ready refuge offered by proprietary foods and canned milks, to which they rush, first trying one and then another, until by good fortune a suitable dilution or a partial adjustment of the elements has been unconsciously found on which the child can live and perhaps thrive. Very frequently this good fortune does not obtain. While one food rapidly replaces another in the most aimless and empirical way the child perishes; whereas, a competent observance of the cause of the malnutrition by an inquiring and painstaking investigation, together with a thorough knowledge of the methods of modification in its present state of perfection, would save valuable time and thereby many lives.

In order to be successful in the artificial feeding of infants it is necessary to be thoroughly acquainted with the anatomy and physiology of the infantile digestive system under normal conditions, *i. e.*, the capacity of the stomach, the length of time required for digestion, the manner in which the various elements of the food are disposed of—all are necessary to a complete understanding of infantile dietetics. We must have a thorough chemical and physical knowledge of the substitute food, the amount and character of the different elements, and a rational method of arranging and combining them, so that the natural food will be approximated. This constitutes the modern modification of milk and marks the first real advance in infantile dietetics.

The first modified-milk mixtures were those of Meigs, whose modification was based approximately on an analysis of mother's milk, *viz.*: Fat, 4.00 per cent.; sugar, 7.00 per cent.; proteid, 1.5 per cent.; ash, .15 per cent. (analysis by Leeds). It was recommended that this be diluted in case it disagreed with the child. But this was faulty in that the individual digestive powers of the infant were not considered nor the variability of the different constituents of cow's milk taken into consideration. The proprietary foods hold out the inducement that they are already modified to suit the needs of the infant. No doubt they are carefully prepared and are the result of much well-directed study. However, almost all of them contain starch or carbohydrates in excess, and as the saliva and pancreatic juice cannot digest starches before the fifth or sixth month, their continued administration will eventually cause intestinal fermentation. Some of these foods serve a useful purpose in making mixtures of partially dextrinized starch and modified milk, which, under certain conditions, are admissible and even advisable. The dextrinized foods intended to be used without milk, in the hands of the writer, have always been disappointing. Some of them claim an analysis closely approximating mother's milk, such, for instance, as Eskay's Albumenized Food, the formula of which is said to be: Fat, 4.16 per cent.; proteid, 1.76 per cent.; total solids, 11.33 per cent. They succeed for a time in a limited number of cases, but, if continued for several months, malnutrition more or less severe will almost certainly ensue.

Condensed milk is perhaps the most universally popular article of substitute food, and is by all odds the most pernicious. It is responsible for more malnutrition, gastro-enteritis, rhachitis, and infantile anemia than all other articles combined. Holt states that after six years of critical observation he has yet to see an infant, fed solely on canned or condensed milk, who did not exhibit the signs of rhachitis to a greater or less degree. They may on casual examination seem like healthy infants, for they are frequently fat. However, a careful inspection will disclose a rhachitic rosary, delayed and irregular dentition, frontal prominences, lusterless hair, dry skin; and, in one case, a very fat baby which came under the writer's notice, craniotabes was present to a marked degree. It should be noted that infants fatted on foods rich in carbohydrates lose their fat rapidly and have little resistance during acute illnesses.

[1] Read at the Seventh Annual Meeting of the Associated Physicians and Surgeons of Long Island, held at Northport, June 6, 1900.

The analysis of condensed milk containing sugar (by Leeds) gives: Fat, 12.10 per cent.; albuminoids, 16.7 per cent.; sugar, 38.88 per cent.; ash, 2.66 per cent.; making a total solid of 60.66 per cent. Diluted with eight times its weight in water will give: Fat, 1.51 per cent.; albuminoids, 2.01 per cent.; sugar, 4.86 per cent.; ash, .32 per cent.; a total solid of 8.7 per cent., water 91.31 per cent. As compared with mother's milk, as analyzed by the same chemist (Leeds), the above will show a deficiency of fat of 2.49 per cent., an excess of proteid of .51 per cent., and a deficiency of sugar of 3.14 per cent. If less water is used, the proteids, which are high with this dilution of one to eight, will be further increased and result in the passage of stools containing lumps of undigested casein. The Anglo-Swiss and the American-Swiss brands of canned milks, preserved without sugar, and with any rational dilution will give deficient fats, excessive proteids and deficient sugar.

Therefore, condensed milk, let it be ever so pure and carefully prepared, is not a suitable substitute for mother's milk. To meet the indications rationally, we must select some substitute which contains all the elements of mother's milk and is susceptible of such modification as will suit the needs and digestibility of the infant, taking human breast-milk as a standard. It has been found that cow's milk furnishes the elements in a form available for such modification as is required.

To properly modify milk for infant feeding, it is well to bear in mind that these elements differ, not only in their proportions as compared with mother's milk, but the elements themselves differ both chemically and physically. The reaction of cow's milk is either neutral or faintly acid, and mother's milk always alkaline. The degree of acidity of the cow's milk varies with the kind of food which she is receiving, some of the grasses producing a neutral or even an alkaline milk, notably the blue grass of Kentucky, the grasses indigenous to the islands of the St. Lawrence River and Lake Ontario, and most of the clovers. The fat of cow's milk is in larger globules and more difficult of digestion and has a higher refractive index. The proteids differ in coagulability and digestibility as well as chemically This chemical difference is not well understood, but Siegfried and Wilmaack have found a diminution of nuclein in cow's milk; human milk containing 1 per cent. to 1.3 per cent. grams to the liter, while cow's milk contains only .6 per cent. grams to the liter.

If the composition of mother's milk is to be a guide in artificial feeding, a grave error has been committed in the administration of proteids. The Adriances, in an examination of two hundred specimens of human breast-milk show that the proteids constantly diminish during lactation, diminishing very rapidly during the first two days, not so rapidly during the next twenty days, and then very slowly to the end of lactation. The rule has been to begin with low proteids, say, .75 per cent. during the first week, and increase gradually to about 2.25 per cent. at the sixth month. It is very probable that infants during the course of their lactation would assimilate more of the proteids from cow's milk with a closer observance of the diminution of proteids as noted in human lactation. This condition was noted by Pfeiffer, Koenig, Klemm and others. Holt mentions it on the authority of Koenig, but ignores it in his modification of cow's milk to infant feeding. This point has been plainly noted by Zahorsky in his article, "A Critical Study of Infant Feeding Based on Recent Analyses of Human Milk," published in *Pediatrics*, Vol. V., 1898. He quotes Schlossman in support of the view that babies from four to eight months on high proteids show an increased mortality. This is at a period in the child's life, when, according to the "gradually-increasing method" the lines cross, the proteids becoming excessive at a time when they should be diminishing.

During last season the writer had occasion to test this theory clinically in two cases, and found that they rapidly improved after cutting the proteid from 1.5 per cent. to .75 per cent., then gradually working up to 1 per cent. and finally to 1.25 per cent., when the return of casein curds in the stools necessitated a reduction to 1 per cent., on which they thrived until weaning. The fact is that after a serious gastro-intestinal lesion, perhaps caused by an excess of proteid, it will be months before the same amount of proteid can be tolerated, as if the lesion had not occurred. When proteids are not well borne by the infant, and it becomes necessary to reduce the percentage very low, they will sometimes thrive on whey mixtures. Whey has the following composition, according to Koenig: Proteid, .86 per cent.; fat, .32 per cent.; sugar, 5.00 per cent.; salts, .65 per cent.; the proteids consisting largely of lactoglobulin and lactalbumin.

Now, the carbohydrates also differ chemically and physically. In human milk there are probably two sugars, a crystalline and an amorphous. Zahorsky notes that sugar from human milk crystallizes in rhomboid plates and sugar in cow's milk in wedge-shaped plates. In human milk the carbohydrates constantly increase during lactation and this should be noted in modification of cow's milk.

The above are some of the inherent difficulties found in the adaptation of cow's milk to infant feeding, which are in part compensated by a proper modification, so much so, that every infant free from congenital weakness or disease can be made to thrive, if the indications governing the modification are complied with. From observation it seems that the proprietary foods are used as extensively or even more extensively in the country districts than in the cities, and condensed milk of various brands is very popular with the laity and receives considerable support from the profession. This is a condition which, in the light of the results obtained by our city brethren in modification of cow's milk, shows a

decided lack of interest on the part of the country practitioner: and these results, too, obtained under all the adverse conditions consequent on a lack of supervision in the production and transportation, during which time it is liable to contamination from various sources. The city doctor has given us data and methods for modification, and it now behooves the country doctor to use his influence and advantage toward the reversal of the more or less filthy methods employed in most dairies at the present time.

Holt and Rotch in their text-books give excellent methods for modification, but recently exact formulæ have been derived, giving more accurate results. There have been a number of formulæ published for the modification of milk for infant feeding. Westcott's formulæ, I believe, first appeared, then Coit's decimal system, then Baner's formulæ and later Taylor's. Of these formulæ, that of Baner is the simplest and most popular. It is founded on two propositions: (1) The proteids and fat are practically equal in whole milk, being about 4 per cent. of each; and (2) the cream must be thought of as a whole milk plus a certain percentage of fat. According to Baner's formula, in order to estimate the quantity of cream required in a certain mixture, you divide the total quantity by the extra fat and multiply by the difference between the desired percentage of fat and the desired percentage of proteids. To estimate the quantity of milk, you multiply the total quantity by the desired percentage of proteids and divide by the percentage of fats. To estimate the quantity of water, you subtract from the total quantity the sum of the cream and milk.

Coit's decimal method is simpler arithmetic, but requires a number of standard cream mixtures which will be difficult to obtain, besides the metric system is not well understood by the laity. Taylor's formulæ were suggested to meet a shortcoming in Baner's method. Given a milk overrich in fat, for instance, eight per cent., the modification by Baner's formulæ would give far too much fat. However, milk overrich in fat will not be suitable for infant feeding, because, not being a well-balanced milk, it will probably have other inherent shortcomings.

The most serious problem confronting the pediatrist to-day is the universal difficulty of securing a pure cow's milk for suitable modification. Even before it leaves the milk-duct of the cow it is liable to contamination, and this liability increases with every manipulation until it is prepared and fed to the infant. This brings us to a consideration of certified milk, which is the second part of the paper. The first efforts in this direction were made in the city of Newark seven years ago and were the result of an agitation begun in 1889 by Dr. Coit, a leading pediatrist of that city. He brought the matter to the attention of the Practitioner's Club of Newark, and it resulted in the appointment of a committee to secure a better milk-supply. After considerable effort a dairyman of superior intelligence was found who was willing to attempt the experiment. A veterinarian, a chemist, and a bacteriologist were appointed, and, after certain exactions were satisfied, the milk received the certificate of this committee. Several producers, as soon as the experiment promised success, attempted to imitate the methods of this dairy, but their results fell far short of the standard, thus exemplifying the necessity for intelligent and trained supervision.

Soon after, a committee of physicians in the city of Buffalo, following closely the methods of Dr. Coit, furnished a certified milk. They had the entire supervision of the dairy, including the feeding and caring of the herd, the straining, aerating, cooling and bottling of the milk. The committee required a percentage of fats of 4.5 per cent., and the number of bacteria to be below ten thousand per cubic centimeter. In the milk ordinarily supplied to the city there were from 125,600 to 1,000,000 bacteria per cubic centimeter. The next city to adopt a method for certified milk was Rochester, which was done under the supervision of the Board of Health. This Board contracted with one of the most reliable dairymen to furnish them a milk for the season of a certain standard of fat and a bacteria limit. The product soon became unsatisfactory, when an inspection of the dairy revealed an almost absolute return to the careless methods obtaining in most dairies. A contract was then made with another dairyman, noted for his intelligence and honor, but this, too, proved a failure. They finally concluded that the only sure method to obtain a good milk for infant feeding was to rent the cows, barn and pasture for the season, and produce their own milk.

It is obvious, therefore, that there is something radically wrong in the methods heretofore pursued for the production of a suitable milk for infant feeding. A reform of this kind should begin first with the cow, then the dairyman, and next the distributor. It should be determined that the cows are healthy, preferably the native or Holstein breeds; they should be well fed on nutritive grasses in the summer, with a grain ration of at least ten pounds per day, and in the winter on good hay, meal and sugar beets. The writer finds that milk from cows fed on green corn during the autumn almost universally produces diarrhea in infants, and that cows themselves while on this food have diarrhea, and after feeding for several weeks they expel large quantities of mucus, the bacterial flora of which will prove a wonder to the examiner. In order to determine the changes produced in milk from cows on this diet, I communicated with Professor Vaughan of Ann Arbor, who replied that he was not aware of any such condition of the milk produced by this food, that he could readily see how the bacterial flora of the intestinal canal of the animal might be changed, and he believed that the diarrheas were produced by the excrement of the cow getting into the milk. Dr. W. A. Kratzsch, in an article on "Infant Feeding" in *Pediatrics,*

Vol. VII., 1899, has had the same experience as the writer.

The cows should be tested for tuberculosis at least twice a year, and those responding to the test should be destroyed at once. Ninety-eight per cent. of cows responding to this test will present post-mortem evidences of tuberculosis. The other two per cent. may be cases of such recent infection that post-mortem evidences are not perceptible. Even if this small percentage were not infected, it would be obviously unwise to attempt to save any of the number responding to the test. Dr. Jacobi believes that two out of every hundred cows will be found tuberculous. This percentage on Long Island, where the breeds of cows susceptible to this disease predominate (*viz.:* Jersey and Guernsey) is evidently too high. They should be examined daily for excoriations of the teats and udder and also for suppurative conditions in the udder. Garget is much more prevalent than is generally supposed. It is frequently overlooked by the milker or its importance not recognized. Woodward of Philadelphia reports a case of a woman who became very ill after drinking milk which was supplied by her dairyman. An examination of this milk showed that pus and streptococci were present in large numbers. Up to the present time no streptococcus toxin has been found; however, the very alarming symptoms produced by their ingestion would indicate the existence of one.

Garget is frequently caused by abrasion of the teats, the infectious matter finding its way into the milk ducts by continuity of structure, and, hence, the cows should not be permitted to pasture in fields covered with underbrush. They should have access at all times to a pure water-supply. They should be driven to and from pasture slowly, avoiding hurry and excitement of any description; they should be well groomed twice each day and have an abundance of straw to lie on at night. A nervous animal, or one not susceptible to domestic training, should not be used in the production of milk for infant feeding. As soon as a cow is discovered rutting the milk should be discarded. This condition should be anticipated by the dairyman in order that the exclusion may be as early as possible. During this period there is first an excess of proteids and later a diminution below the normal.

Prior to milking the udders and teats should be thoroughly washed and the cows aproned, to avoid filth and hairs falling into the milk. The first squeezes should be discarded, so that the bacteria which have found their way into the milk-ducts may be washed out. Dr. Vaughan has found bacteria in the milk of the fortieth squeeze. It is worth mentioning in this connection that the hair on the udder should be kept clipped. The washing should be done by one of the dairy hands and he should be followed by the milker, who has prepared himself as carefully for this procedure as a surgeon does for an operation. The milk should be received in sterilized pails fitted with double perforated covers, between which is interposed a layer of sterilized asbestos. This substance is suggested because it can be washed and sterilized at a high temperature and used repeatedly. The milk should then be rapidly cooled and poured through another sterilized filter into bottles and kept on ice for delivery.

The cows should be housed in large, well-ventilated barns, with an abundance of air. Dr. MacVail of Scotland remarks that "by closing every opening and by raising the temperature of the barns by means only of the animal heat of the cows themselves, you may turn a barn into a laboratory for the production of both milk and tubercle. There is no more absolutely preventable disease than tubercle in cow's sheds."

The milking should be done in a room used for no other purpose, and this should be kept scrupulously clean. Dr. Adams of Washington observed that milk which had been produced with a view to purity became contaminated, and upon investigation it was found to be due to sweeping the milking sheds just prior to milking, causing the air to be filled with dust.

Milk so produced will not require sterilization at either high or low temperature. The bacteria will not all be eliminated, but the pathogenic ones certainly will be. Indeed, the point is not yet settled whether most of the bacteria found in milk are not harmless. In this connection it is well to remember that although milk from the human breast is sterile at the time of leaving, it immediately becomes contaminated with organisms the moment it enters the mouth of the child. I believe it is a point settled among those engaged extensively in infant feeding that sterilization or even Pasteurization of milk is a necessary evil. Booker distinctly states that it certainly is not a dietetic measure, but a disease-preventing one. Brush states that when milk is boiled it is at the same time killed. Certainly some of the albuminoid constituents are coagulated, thereby retarding their digestion and destroying their nutritive value. It is quite established that some of the living cells in milk do not undergo digestion at all, but enter directly into the lacteals and thence into the blood-current. Of course sterilization will not destroy the toxins already produced and thereby many times offers to the unthinking a deceptive security. Winter reports two cases of scurvy in infants fed exclusively on Walker-Gordon milk which is a sterilized product. Sterilization also changes the fats and in some way interferes with the natural emulsion.

Recently the production of cream has been receiving some critical attention. Starr of Philadelphia has made observations on infants fed on Walker-Gordon milk. He classifies under three heads, *viz.*, the satisfactory, the partially satisfactory, and the unsatisfactory. Of the first class he has seen but three in as many years. Of the second class he has seen sixteen cases, and of the third class thirty-five cases. The first class embraced children continuously fed on the laboratory milk from shortly after birth to the time of

beginning of mixed diet; the second class included cases on laboratory milk from six months to a year, and the third class included infants fed upon laboratory milk after the first eight weeks of life. He also states that he has never seen an infant from two to ten months able to stand a laboratory mixture of stronger proteid percentage than 1.5 per cent., and he has often seen cases of two months and more unable to digest a percentage of .5 per cent. He attributes this to a destruction of the natural emulsion by the centrifugalization which in some way lessens the digestibility of the proteids, leading to diarrhea. A microscopical examination of the artificial emulsion prepared from centrifugal cream does not differ essentially from that prepared with gravity cream, except perhaps in a very few instances the oil globules were found much larger and irregular in shape. However, this may not have been the result of centrifugalization.

The bottled milk should be kept on ice during delivery and also kept on ice until prepared for use. Instructions should be left with the family in which the milk is to be used, detailing the importance of maintaining the milk in its purity, giving instructions for the preparation of the food in separate bottles for an entire day. Just here is where the superb advantages are apparent to the country practitioner and his patient. With a competent dairy at his door, the milk could be prepared according to a stated formula, with all the exactness which characterizes the laboratory product, and with the additional advantage of being fresh from the cow and delivered to the family all ready to slip the sterilized nipple on at proper feeding time. It seems that this possible advantage has never been considered, much less realized by the village doctor.

The question now arises, How can such dairies be established and supervised?

My first answer is that heretofore the first and most important requisite in the establishment of a model dairy for the purpose of infant feeding has been neglected, *viz.*, the selection of a suitably-educated dairyman. Taking one dairyman with another, as found in country villages, they usually rank in point of honor with the best citizens of their respective localities. If interested in their vocation they may perhaps have given some thought and study to the production of a superior milk. In many instances active competition has been a spur more or less effective, but in a milk for infant feeding this does not suffice. *We are asking for a technical product, and necessarily the producer must have a technical knowledge of the manner and method of producing the required product.* It is not enough that his dairy should be inspected at intervals by a committee of physicians, a bacteriologist and a veterinarian, because in the meantime, between these visits, errors in the care of the herd, in the technic of milking and handling the milk in a sanitary way, will occur without recognition by a man who is not sufficiently skilled to appreciate the importance of an absolutely clean product.

Therefore, the person engaged in the production of milk for this purpose should be specially educated and trained. He should be a veterinarian to the extent of recognizing transient illnesses in the cow, of adjusting her proper food and hygienic housing. He should have sufficient knowledge of bacteriology to recognize the importance of producing a milk as nearly free from micro-organisms as possible and totally free from the pathogenic ones. To this end he should have entire supervision of every employee in the dairy, and no one who is not perfectly well or who has come in contact with any contagious disease should be permitted to enter the establishment.

These requirements, of course, are very exacting and a man of a high order of intelligence for this work will be necessary. Nor are these attainments altogether sufficient, for the spirit of commercialism might predominate and in many instances overbalance the discretion of the producer. My second answer is that the dairyman should also be supervised; and this leads to another important question. By whom?

Every town and village possesses at the present time a body known as a board of health, whose duty it is to preside over the health of the community where they have jurisdiction. Not only should they quarantine known cases of contagious disease and exert a vigilance for the suppression of nuisances, but they should concern themselves about any cause leading to a subversion of health. The helpless infant, who has been so unfortunate as to be deprived of his natural food, is, or should be, not only the object of solicitude upon the part of the parents or guardians, but of careful watchfulness on the part of that body to whose care is entrusted the general well-being of the community. It is unfortunate that health boards as at present constituted are incapable of dealing with these subjects. They are health officials by virtue of holding political office, which in no way applies to the principles of sanitation, and the board very frequently includes an incompetent health officer. The laws governing such appointments should be revised.

The supervision of dairies for the production of milk for infant feeding is certainly well within the duties of health boards, and as these are subordinate to the State Board of Health it would really amount to State supervision of the milk-supply for this purpose.

A board of health to undertake this work, if not already so equipped, should embrace a veterinarian and a health officer who is capable of either making the necessary chemical and bacteriological tests or of overseeing them. Every producer of milk for infant feeding should be obliged to submit his herd and premises to inspection and his product to examination at any time. He should be granted and should hold a certificate from this board as long as the exactions are complied with. At the same time, the board should interdict by ordinance the sale of milk for artificial feeding of infants not bearing their official seal. We believe that with such a system in

operation, it would result in the immediate reduction of the present appalling infantile mortality at least fifty per cent.

Little claim is made for originality in this paper, it being chiefly a more or less rambling statement of facts, some of them well known. But, if it results in stimulating a deeper interest in this most important branch of medicine by my fellow country practitioners, the effort will obviously not have been in vain.

SUBPHRENIC ABSCESS FOLLOWING APPENDICITIS; TWO CASES.[1]

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Case I.—Mrs. C., aged forty-nine years, widow, mother of two grown children. She was seen in consultation with Dr. D. R. Kinsell, Jr., June 3, 1899. Had appendicitis in 1894. This was a well-marked and severe attack. Following this she had mild attacks every year and another severe attack in May, 1898. In November an umbilical hernia, which previously had never troubled her particularly, became strangulated, but was finally reduced by taxis. This attack of strangulation was followed by more marked symptoms of chronic appendicitis. March 30, 1899, her present trouble commenced and has continued since that time. She is now suffering from great pain and tenderness in the region of the appendix and along the ascending colon. There is an enlargement and some tenderness of the liver, this enlargement being distinctly downward. She has lost considerable flesh. During this entire time she has had some elevation of temperature and increase in the pulse rate. She is, however, exceedingly fleshy so that an examination is very unsatisfactory. The enlargement of the liver is the most noticeable feature that can be demonstrated. The tenderness and pain are situated farther back than is usual in appendicitis, leading to the diagnosis of an appendix placed behind the colon. Owing to the long continuance of her symptoms, operation for the removal of the appendix was advised and was done June 6th at the Protestant Hospital, several members of the American Medical Association being present. Because of the supposed location of the appendix the incision was made well over in the loin and longer than usual in order to enable the liver to be thoroughly examined. Through the incision a greatly elongated and catarrhal appendix, which was found running up behind the colon, was removed by inversion. The right lobe of the liver could be easily palpated and although much enlarged, this enlargement seemed symmetrical and smooth. Owing to the fat, however, it was not possible to make a thorough examination (without undue traumatism). As there was no pus around the appendix the incision was closed at once with a figure-of-eight silkwormgut stitch. Convalescence was entirely satisfactory and during the two weeks that the patient remained in the hospital she was quite free from pain, although there still persisted a little elevation of temperature which could not be satisfactorily explained. On her return home, however, the old pain and soreness again manifested themselves, although now above the location of the appendix. I saw her several times in consultation with her physician, but owing to the large amount of adipose could only say that we must wait for something to manifest itself. The liver was apparently greatly enlarged, but the cause of the enlargement was obscure. Had it not been for the febrile disturbance a diagnosis af malignancy would have been unhesitatingly made. The elevated temperature and pulse-rate were the only manifestations of any infection. There were no chills nor sweats.

July 20, 1899, her physician informed me that a new feature had presented itself, and on seeing her with him I found every evidence of a chronic abscess pointing on the right side at about the tip of the twelfth rib. I advised an immediate opening of the abscess, which was consented to and was made the following day under cocaine anesthesia, the incision being made just below the twelfth rib. The incision gave exit to an enormous amount of pus, and on introducing the fingers a large ragged cavity was found between the liver and diaphragm. The limits of the cavity were far beyond the reach of the fingers. The cavity was washed out, drainage tubes inserted and convalescence was entirely uneventful, the cavity closing in about six weeks.

Case II.—Miss C. W., aged sixteen years, was seen with her physician, Dr. Cooperrider, at 5 P.M. July 26, 1899. On getting her history, I found that she had assisted her mother in the housework the day before, although not feeling entirely well. In the afternoon of that day she was taken sick with cramping pains in the stomach and with vomiting. She did not think she was sick enough to send for a physician. Rested fairly well during the night. Was sick on the following morning, but did not wish a physician and none was called until afternoon. He found her with a temperature of 103° F., pulse 130, abdomen tympanitic. He at once telephoned me, as he thought the case was one demanding prompt operation. When I saw her, an hour later, her temperature was still 103° F., pulse 136 and poor; abdomen tympanitic and tender throughout, but especially in the region of the appendix. The patient's general appearance indicated such a serious condition that I at once united with her physician in urging an immediate operation.

Operation was done the same evening at 8 P.M. at the Protestant Hospital. As I expected to find sero-pus I did not make the usual gridiron opening, but a straight incision about two inches in length. On opening the peritoneal cavity some opalescent fluid escaped. Introducing

[1] Read before the Ohio State Medical Society, May 9, 1900.

the fingers the appendix was reached without difficulty, as there were no adhesions and no attempt had been made to hedge off the abdominal cavity. Drawing up the appendix the end was found gangrenous and perforated, an enterolith just protruding. The appendix was cut off and removed in the usual way, catgut being used throughout. The pelvic cavity was wiped dry and the incision closed with silkwormgut and temporary drainage. The drainage was removed a few hours later and convalescence was entirely uninterrupted. As she was somewhat homesick she left the hospital August 15th. For the last four or five days of her stay in the hospital there was a very little, but almost constant, elevation of temperature, for which we could not account, but attributed to her nervousness. The evening of her return, however, following a chill, her temperature run up to 104.5° F. with corresponding general disturbance. I saw her the next day with her physician, but was unable to find the cause of the trouble. There was no evidence of any inflammatory disturbance in the region of the colon or in the pelvis. There was, however, a little tenderness on pressure just below the short ribs on the right side, and I told her physician to watch this point for the development of trouble.

From this time, August 16th, until August 28th, she continued to have irregular fever, with frequent pulse and profuse perspirations. By this time the liver had become depressed below its proper position, so that the lower border was some three-fingers breadth below the ribs. There was no bulging at any point, so that we were unable to decide whether the pus, which we were satisfied was present, was in the liver or between the liver and diaphragm. She was profoundly septic and her failing strength and cachexia indicated the importance of doing something for her relief. Accordingly, on August 28th an operation was done at her home, as she and her friends objected to her being taken to the hospital. An exploratory incision was made on the right side just below the border of the ribs and parallel with them. This opened directly on the liver, which was found entirely normal, but with a mass of exudate back of the suspensory ligament with evident adhesions at this point. The general peritoneal cavity being walled off by sponges, the finger was forced into these adhesions and the pus cavity found. This was about the size of a small orange, with a somewhat ragged interior. The cavity being thus opened was washed out and a counteropening made for drainage lower down on the right side and a drainage-tube wrapped in gauze introduced. This drainage-tube passed well up between the ribs and the liver into the concavity of the diaphragm. The gauze sponges were then carefully removed and iodoform gauze packed in between the liver and the opening so as still to protect the general cavity. The first opening was then closed with silkwormgut as usual. Convalescence was remarkably prompt, the abscess and wound healing thoroughly in about two weeks.

I have thought it wise to report these two cases of subphrenic abscess because the subject, while not entirely new, is one which is not familiar to the great majority of the members of the profession, especially when occurring as a complication of appendicitis. After a study of the statistics presented in the monographs of Leyden, Maydl, and Sachs, together with the addition of a few other cases that have been reported, including a most interesting case and *résumé* by Dr. A. H. Freiberg of Cincinnati, I am able to find but 43 cases of this form of abscess following appendicitis. My two cases, therefore, make the 44th and 45th cases. Unfortunately, a considerable number of the reported cases have not been diagnosticated until the autopsy, and yet I think that when the attention of the profession is once directed to this point a diagnosis should be promptly arrived at in the great majority of cases, if not in all. While subphrenic abscess without regard to cause is a very infrequent occurrence, from the cases collected by Maydl it appears that appendicitis furnished the second largest number of cases.

Pathological examination has shown that these abscesses may be either extraperitoneal or intraperitoneal, the position of the appendix possibly determining which variety will be found in any particular case. In my first case, as the appendix was behind the cecum, I am inclined to believe that infection extended upward behind the peritoneum and that the entire abscess was, therefore, retroperitoneal. (I may state in passing that I have seen one case of appendicitis in which the abscess burrowed up behind the colon, perforated the diaphragm and was discharged through the bronchial tubes. The discharge was taking place in this way when I first saw the case, but the history and physical examination established the diagnosis very satisfactorily. I advised non-interference and gave a guardedly favorable prognosis, which was verified by the patient, a child, making a perfect though somewhat slow convalescence.)

When the appendix is free in the peritoneal cavity one would expect to find the intraperitoneal form of abscess, the infection having been doubtless carried by the peritoneal currents from the region of the appendix to the diaphragm. My second case was undoubtedly of this variety. The diagnosis must evidently be based upon the continuance of the symptoms of infection after the removal of the appendix or after the subsidence of the inflammatory symptoms in the region of the appendix. Careful examination under those circumstances would reveal some tenderness in the region of the liver, with a depression of its lower border owing to the accumulation of pus and exudate between its upper surface and the diaphragm. Pain in the right shoulder has been noticed in a number of cases which have been reported, and would be an important factor in making a diagnosis. It was present in neither of my cases. Hiccough, from irritation of the diaphragm, is also a rather common symptom. It

occurred in my first case but not in the second. In a number of cases which have been reported the pleural cavity became involved by contiguity of tissue, so that the diagnosis was for this reason obscure, and in a number of instances the real trouble was entirely overlooked and only found at the autopsy. An important point in diagnosis in many of these cases is that frequently a subphrenic abscess due to appendicitis contains gas as well as pus, this being due to the escape of gas from perforation of some other hollow viscus in the neighborhood; or more likely still to the presence of gas-producing bacteria. In these cases the presence of the gas in this location would render the differential diagnosis somewhat more simple. In such instances great stress must be placed upon the points brought out by Leyden, namely: (*a*) The previous history of the patient pointing to abdominal rather than thoracic trouble. (*b*) Normal vesicular murmur and normal fremitus at the apex with a sharp line of differentiation from the amphoric respiration found below. On deep inspiration the line of normal fremitus descends to where the amphoric breathing had been previously noticed. (*c*) Very slight displacement of the cardiac apex. (*d*) Slight bulging of the intercostal spaces and no chest-wall immobility. If the pleural effusion is free the differential diagnosis will be much simpler, since there will be no change of the subphrenic conditions when the patient assumes the horizontal position. Aspiration, if the pleural effusion is serous, will show serum above the diaphragm, while pus will be secured by a second aspiration a little lower down.

Since the same causes which produce subphrenic abscess may also result in abscess of the liver, cases will occasionally occur in which a differential diagnosis between these two foci of suppuration may be impossible.

If the disease is unrecognized and, hence, not treated surgically the mortality is very large. Beck's investigations show recovery in only a little over 5 per cent. of these cases. Under proper surgical treatment, however, according to Maydl, the mortality should not exceed 50 per cent., and late reporters make the mortality still less. The treatment of subphrenic abscess is necessarily surgical and should be, I think, conducted through an incision made rather well back on the right side, so as to strike the abscess directly, if extraperitoneal, or through adhesions, if time has permitted their formation. If no adhesions are found, this incision will best allow drainage with protection of the general cavity by gauze. While in a number of instances a cure has been effected by going across the pleural cavity, no surgeon, I think, would operate in this way except under a mistake in diagnosis. Such a method of operating would be distinctly proper in cases seen late and in which a collection of pus already exists in the pleural cavity. In these cases the subphrenic abscess would be most easily in reach from the pleural cavity by incising the diaphragm.

While I think most of these abscesses can be reached, as in both of my cases, by going below the ribs entirely, it should be remembered that the pleural cavity normally stops on a level with the tenth rib and that it is therefore possible to resect this rib and then by pushing off the pleura, resect portions of the ninth and even the eighth, as recommended by Berg, and thus reach the abscess most directly. The danger of wounding the pleura, however, must not be overlooked, and certainly manipulations in such close juxtaposition to the pleura would not unlikely result in a secondary infection of that cavity. It is for this reason that I am inclined to look with more favor, on theoretical grounds, on the infracostal incision.

(*Note.*—After the reading of this paper its author was told by three members of the Society that they thought they now understood the cause of death in a case which each had had in his practice during the last few years. There is, indeed, probably little doubt that this form of abscess occurs more frequently in cases of appendicitis than statistics seem to show, and that its apparent infrequency is due to lack of recognition.)

PETROLEUM IN THE TREATMENT OF PHTHISIS.[1]

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CRUDE petroleum, as yielded by Pennsylvania wells and most other sources, is a liquid oil of specific gravity of .80 to .87, of strong, offensive odor, and in color ranging from light yellow to greenish black. It consists of many hydrocarbons of vastly different volatility and specific gravity. They are separated by fractional distillation. A temperature of 800° F. is attained before the last volatile parts distill over. Crude petroleum yields of gasoline, 1-½ per cent., purified naphtha, 10 per cent.; petroleum benzine, 4 per cent.; kerosene, 55 per cent.; lubricating oils, 17½ per cent.; paraffin wax, 2 per cent.; loss, gas and coke, 10 per cent.

Each fractional distillate is purified by agitation with sulphuric acid by means of an air-blast. After subsidence and separation it is washed with water, agitated with alkali and again washed. That which remains after kerosene and all the more volatile parts are removed is what interests us. It includes the paraffin oils, or so-called amorphous paraffins, the soft, fat-like substances officially named petrolatum molle, and petrolatum spisse. The paraffin oils are still further refined by heating with animal charcoal and repeated filtration through this or purified dehydrated clay. Any paraffin wax in solution is removed after separation by subzero temperature. The oil resulting from this treatment is a much greater refinement of the official oleum petrolatum. It is absolutely odorless, colorless and tasteless, and non-irridescent or fluorescent. A form known as terraline by the refiners is a semi-solid, yellowish

[1] Read before the American Climatological Association, May 3, 1900.

opaque, of slight odor and taste. It contains some paraffin wax and has not had full charcoal treatment. That containing a little more wax is petrolatum molle or the cosmoline and vaseline of commerce.

In 1885 Drs. Samuel G. Dixon and Archie Randolph published the results of their experiments with the administration of vaseline. From four to eight drams were given daily. Every grain was reclaimed, unchanged, from the stools, save minute loss attributable to separating and purifying. In the "London Letter" to the MEDICAL NEWS of April 22, 1899, there was published observation of the same results after the administration of terraline. This corroborated Dixon and Randolph. My own study has been made mostly with the most perfectly-refined product, the colorless, odorless oil, before mentioned. That every minim swallowed passed unchanged entirely through the intestinal tract of man was repeatedly proven. It was argued by the English writer that since all could be reclaimed from the feces, it could have no therapeutic effect other than simply lubricating the intestines and so making bowel-movements easy. Reliance on securing any other result was vigorously discouraged. It can be assuredly asserted that the effect of the administration of these petroleum products is decided and is far more than a simple intestinal lubricant. In over fifty selected cases where nutrition, digestion, and body-weight were impaired, and the purest oil administered in one- or two-dram doses, four times a day, for periods of from three to six months, there was in every instance increase in weight and improvement in health, strength and feeling of well-being.

The gain in weight was 5¼ to 23½ pounds. There was no other change in living conditions or medication which might have caused these improvements. It gave no discomfort in any instance, as it is absolutely indigestible and unchangeable in the intestinal tract, and so no ill of any kind resulted. Nature evidently made no effort towards its digestion or assimilation. In passing of gall-stones I have given nearly a pint in a few hours. Its action must be purely mechanical and solvent. By its constant and diffused presence in the intestines, the environment for micro-organisms was necessarily changed and the adaptability for their growth lessened. Fermentive and putrescent changes were controlled and normal functions along the entire tract were reestablished. The intestinal toxins were not formed, or, if some developed, they were dissolved by the petroleum and so carried off. Indican and ethereal sulphates disappeared from the urine. There is little, if any, doubt that its germicidal effect is purely mechanical. Each micro-organism of necessity is dependent for its existence on the freedom and integrity of its avenues for taking air and nourishment. Should these avenues be mechanically closed by petroleum oil, possessed of its peculiar qualities, the micro-organisms must of necessity die of starvation and suffocation. If it is possible to control the pathogenic micro-organisms of the intestinal tract by such innocuous mechanical means, a valuable addition will have been made to the treatment of chronic bronchitis, incipient and actively established phthisis.

The elimination from the intestines of pathogenic germs and their products by this benign mechanical means secures the conserving of Nature's potent forces for undivided defence against disease-activity in the bronchi and lungs. A close study of the results of its use indicates that it accomplishes all the advantages secured from cod-liver oil and that it is wholly free from the many objections characterizing that unstable animal oil. The action known as alternative seems to be equally as well secured by petroleum as by cod-liver oil. As Nature always makes a more or less successful effort toward the cure of those diseases where an alternative is indicated, and as these same conditions are nearly all associated with disease, disorder, or functional inactivity in the intestines, the elimination of the latter means undivided and therefore stronger and more certainly-victorious efforts in mastering disease-activity in other organs. Chemical intestinal bactericides are all more or less absorbed and the tax of their elimination is an added embarrassment. Nearly all are dissipated long before the entire course of the intestine has been traversed, thus differing from petroleum.

Petroleum also possesses the valuable property of being an ideal solvent and diluent for many remedies popular in the treatment of phthisis, such as creosote, the fixed oils, and nearly all volatile oils and alkaloids and many chemicals. When this oil is used hypodermatically and under antiseptic precautions inflammation does not result and it speedily disappears, physiological action not having been thus far recognized. Theoretically it should be ideal as a fluid for compression of lung by intrapleural injection; I know of no other substance of its approximate properties but that is chemically changeable and may be a food for animal and vegetable life. Many remedies, the therapeutic effects of which are brought about by constitutional impression after absorption, have the quality of objectionable local irritant action when given undiluted. The usual solvents and diluents have decided effects not indicated or desired, namely, alcohol in various strengths, glycerin, volatile and fixed oils, and fats that may become rancid and are of difficult digestion. In many instances pure petroleum oil may replace such solvents, as it offers scarcely more objections than pure water. I have extensively given from five to ten grains of salol in two drams of this oil, four times a day, and reclaimed the oil from the feces and found it to contain some salol and its components, phenol and salicylic acid. This proves the carrying of a chemical antiseptic and antiferment through the entire canal. Phosphorus may be dissolved in it for hypodermic administration. It is a solvent of iodine, sulphur, beta-naphtol, naphtaline, menthol, thymol, camphor, and iodoform. Oleic acid and oleates are

soluble. By the addition of a little ther, chloroform, or oleic acid the field of its power to dissolve is greatly increased, and includes many of the alkaloids.

There is no evidence indicating that that which is removed from crude petroleum in refining has any medicinal virtue. Its range of usefulness as an assistance in combating phthisis is plainly apparent, both by its almost unique mechanical action and in association with other remedies. It is the best medium for the conveyance of remedies by nebulization to the throat and bronchial tubes. It is the ideal remedy for the cure of all forms of constipation, and for treatment of tuberculous diarrhea.

MEDICAL PROGRESS.

Suppurative Bartholinitis.—For the practitioner unable to secure aid, A. Cuche (*La Revue Méd.*, p. 366) recommends the following treatment: The inflamed gland is fixed between the left thumb and index finger, punctured with a bistoury, the wound of which is enlarged to 1.50 cm. with scissors, thoroughly evacuated and cleaned of its mucopurulent contents. Into the cavity a bit of potash pastile is introduced and left. The caustic soon diffuses itself naturally or more rapidly if at first it is crushed. The opposite labium majus must be protected with soft gauze. The next day the cavity is occupied by a black slough, which is the pyogenic membrane of the suppurated gland, separates about the eighth day, and healing is present about the twentieth with an insignificant cicatrix. The patient need hardly cease her occupation.

Charcot-Leyden Crystals and Eosinophile Cells.—There is nothing pathognomonic in the presence of Charcot-Leyden crystals; they occur in various diseases of the air-passages, in nasal polypi, tumors, leucemic blood, pus, in the feces with intestinal parasites, and normally in marrow. In all conditions, normal or pathologic, they stand in intimate relation to eosinophile leucocytes. In order to determine both together in the tissues, B. Lewy (*Zeitschft. f. klin. Med.*, Bd. 40, Hft. 1 and 2) places these in a concentrated solution of magnesium sulphate, then washes with water and hardens in alcohol. Rather thick sections are then stained with eosin. Eosinophiles, like other leucocytes, are ubiquitous, but it necessitates the aggregation of a large number to develop the crystals. The best objects to study, besides blood, are cervical cancer and nasal polypi. Here the crystals appear as red rhomboid bodies partly in the stroma, partly in the cells themselves. The cells are often seen to be ruptured, so that the granules lie extracellular and always, where these are most abundant, the greatest number of crystals occur, showing the intimate relation between the two. Partially putrefied tissues generally give the best pictures, making it probable that the inorganic salts which are liberated through decomposition fix the granules and at the same time precipitate the crystals. The exact relation between both structures is not well known. It is possible that the mother-substance of the crystals, dissolved in the tissue-fluids, exerts a positive chemotaxis on leucocytes and is then taken up by these, rendering them eosinophilic. This mother-substance would thus be an excrementitious product to be removed by the cells. Against this theory, however, is the fact that transitional forms have never been seen. Possibly the mother-substance exerts an attraction on the acidophile cells in the blood and these then yield the material necessary to form the crystals.

Pathology of Pernicious Anemia.—In examining four cases of pernicious anemia, K. Faber and C. E. Bloch (*Zeitschrift. f. klin. Med.*, Bd. 40, Hft. 1 and 2) found achylia gastrica due to a diffuse inflammation of the gastric mucous membrane with atrophy of the glands and cyst-formation. In the intestines, contrary to previous autopsies, diffuse atrophy could not be demonstrated. In certain circumscribed areas about the mesenteric border, the walls of the gut were much thinned and the infoldings much less prominent than normally, but these changes were due to dilatation. In previous cases, atrophy of the intestines has been described as a constant feature, but it is probable that these lesions were due to the action of ferments and bacteria together with post-mortem distention. The condition of the stomach is not the cause of the anemia, but it seems likely that both have a common origin of toxic or infectious nature, the stomach in this respect being affected similarly to the spinal cord in which small circumscribed myelitic areas, which later coalesce, abound about the vessels.

Non-Tropical Chyluria.—W. E. Predtetschensky (*Zeitschrft. f. klin. Med.*, Bd. 40, Hft. 1 and 2) discusses the case of a Russian who developed chyluria although she had never left Europe, and concludes as follows: (1) Chylous urine may result from a fistulous communication between the lymphatic and urogenital system. (2) It may also be due to lipemia, the kidneys secreting a fatty urine. (3) Tropical chyluria is always parasitic and due to the Filaria sanguinis hominis or Disthoma hematobium; non-tropical chyluria not dependent on lipemia may be caused by the Eustrongylos gigas and possibly also by Tinea nana. (4) The pathology of the non-parasitic types is not known, but these may depend on tumors, peritoneal adhesions, etc. (5) Certain peculiarities of the non-tropical disease, such as the absence of sugar in the urine, the occurrence of periodic attacks and the varying composition of the urine during the twenty-four hours, require further explanation.

Pancreatic Digestion of Casein.—From an extensive series of experiments B. K. Rachford (*Archives of Pediatrics*, June, 1900) reports that both the diastatic and proteolytic action of rabbit's pancreatic juice go on more rapidly when the juice is acting upon a mixture of starch and

albumen, than when acting on either alone. The digestion of casein is slightly facilitated by maltose, milk-sugar or lime-water; it is greatly increased in the presence of sodium carbonate and slightly retarded by combined hydrochloric acid. Bile assists the pancreatic juice in digesting casein and causes increased activity of the juice in the presence of combined acid. Thus the beneficial action of hydrochloric acid is not confined to the stomach, but as combined hydrochloric acid it is continued into the intestinal canal where, provided that the supply of bile is normal, it not only aids the pancreatic digestion, but also acts as an intestinal antiseptic by its restraining influence on fermentative bacteria.

Human Hematolysine.—Most diseases result from the excess of the action of some morbid agent over the reaction on the part of the living organism. In many instances the morbid substance may be acted upon by therapeutic means; yet there are diseases in which the causative factor is quite unknown, and such M. Metchnikoff thinks *(Buletin de l'Académie de Médecine,* Paris, June 4, 1900) we may be able to influence favorably by increasing the resistance of the tissues. Following out the recent discoveries of cellular toxins of animal origin, such as are contained in the serum which kills spermatozoa, that which destroys the renal epithelium, or that which dissolves leucocytes, he has found that by inoculating a goat with human blood the goat's serum becomes a hematolysine capable of stimulating to great increase of red blood-cells and hemaglobin when injected into the human circulation.

Gaseous Gangrene.—G. Moscatello and C. Gangitano (*La Reforma Medica,* May 21-22-23, 1900) give the result of an extended research. The progress of our knowledge of gaseous gangrene has not kept pace with our knowledge of other infections. Some have looked upon gangrene as a variety of diffuse inflammation, while others as due to a specific cause. They report five cases in which accurate clinical, pathologic and bacteriologic data were kept, and the results of some years of observation. Moscatello was among the first to isolate the germ causing the disease. From clinical symptoms they describe two groups: First, gangrene of the tissue with emphysema, rapidity of systemic infection, and a tendency to the progressive invasion of adjacent sound tissue. Second, like the above, but with no tendency to involve adjacent sound tissue. Bacteriological examination showed the presence of (1) staphylococci and streptococci in some cases; (2) bacillus coli communis in two cases, once with streptococci and once with the proteus vulgaris. (They dissent from the opinion of Chiari, Hitschmann and Lindenthal, that the bacillus coli communis produces gas only in diabetic subjects, inasmuch as the writers proved that the injection of bacillus coli communis with proteus vulgaris excites gangrene in non-diabetic subjects. (3) Proteus vulgaris, in itself, is not capable of producing gaseous gangrene. (4) Bacillus aërogenes capsulatus (Welch), large bacillus with rounded ends, encapsulated, immobile, easily stained, growing readily in ordinary nutritive media, evolving gas and occasionally forming spores. This last rarity of germ, if injected into veins or tissue, provided the tissue were sound, produced no appreciable effect; but if injected into a body with lowered vitality, in which body at some site distant from the point of injection, a mechanical lesion (*e. g.,* bruise or burn from chemical caustic) had been made, a typical gaseous gangrene abscess would then result at the site of such trauma. From these and from other experiments, it is fair to presume that this organism does not assume a pathogenic rôle in *sound tissue,* but it will multiply and set up gaseous gangrene in tissue altered or lowered in vitality. Clinically they find that alone, the bacillus aërogenes capsulatus has a tendency to localize abscess-formation with but little involvement of adjacent sound tissue; but, if associated with other bacteria (already described), it will involve such tissue rapidly and progressively. Prognosis they believe to be much better than heretofore observed, owing probably to the use of antiseptics; in their five cases there were no deaths. Relatively, the probability of a cure is greatest when we have to deal only with a single infection; when, however, the infection is a mixed one, *e. g.,* streptococci and staphylococci, the prognosis is more grave. Treatment consists of free opening of the abscess, removal of dead tissue, and copious irrigation of the wound with antiseptic solutions. In the mixed infection with progressive involvement of the parts, amputation should be practised early, care being taken to amputate in sound tissue.

Tetanus Antitoxin.—H. L. Van Natta gives a history of a case of a child of five years suffering from tetanus which came under his notice. The wound was made by treading on a rusty nail which penetrated the foot to the depth of half an inch. In the *Therapeutic Gazette* for June, 1900, the history is given. Four days after the injury there was difficulty in mastication and fever set in. The next day the temperature was 100° F., pulse 120, and the posterior cervical muscles painful and rigid. Two grains of chloral and potassium bromide every two hours, together with small doses of quinine and five minims of tincture of passiflora, were administered. The patient gradually grew worse in all respects. Antitoxin was advised and telegraphed for, but through some mistake did not arrive until one week later. In the meanwhile the temperature had risen to nearly 103° F., the pulse to 135, and the respiration to 40 per minute. Opisthotonous was well marked. Spasms occurred on the slightest provocation. The only food which could be taken was small quantities of milk and beef tea. Sleep was out of the question. The bromide of potassium was increased to 10 grains and the chloral to 8 grains every two hours. Whisky

was given freely. Finally, when the antitoxin did come, the patient was so far gone that the physician hesitated to give it. However, it being the only chance left, it was administered. Ten cubic centimeters were injected just below the scapula. One hour after the child fell asleep for three hours. On the child's awaking another ten cubic centimeters were injected near the first site. The child fell asleep again and remained so for two hours, not being awakened by the spasms. The pulse had fallen to 120, the respiration was about 38, and the temperature 101.5° F. The next day the patient could open her mouth half the normal extent and was able to articulate her words feebly. The third dose of antitoxin was given and the temperature fell to 100° F., pulse 120 and of good volume. Milk and eggnog could be taken in sufficient quantity. General relaxation had taken place except in the injured limb from the knee down. After some days a sudden rise of temperature was again subdued by the antitoxin and the temperature sank to 99° F. A condition of clonic spasm existed in the injured foot for a month afterward. Van Natta's observations in the case are that he discontinued the antitoxin entirely too early. He suggests using ten cubic centimeters every eight hours until a normal temperature has been obtained. He also states that one should never fail to cauterize thoroughly every wound that possibly could have been poisoned by the entrance of toxic germs.

Anesthesia and Respiratory Impediments.—D. W. Buxton (*Lancet*, June 16, p. 1714) classifies respiratory impediments as anatomical and pathological, as clinically recognizable before and independent of anesthesia, as made apparent by the anesthesia and lastly as excited purely by the anesthesia without any physical basis. Among the last are those changes in the blood which the inhaled gas produces setting up undue venosity, imperfect pulmonary circulation and, finally and indirectly, pulmonary impediment, *i. e.*, inefficient respiratory function. The site of physical obstruction may be in the upper air-passages, nasal and pharyngeal malformations, adenoids, enlarged tonsils, hypertrophied tongue, adhesions between tonsils and faucial pillars, etc. All these add greatly to the difficulties of the anesthetization. Mechanical external causes may also impede the respiratory act, either primarily or secondarily under narcosis. Goiters, angina Ludovici, lymphadenoma, lymphadenitis, obesity, short, thick neck, emphysema and many others belong to this class. Chloroform, as a rule, is the choice in both the foregoing classes of patient. In goiters where all mucous secretions seem to be overabundant, ether increases the difficulty. Chloroform should be used and given very evenly and to the lowest degree of anesthesia possible for the work. Changes in posture from that of choice, namely, dorsal decubitus, head extended, constitute another difficulty. The guides here are the rate, rhythm and force of the respiratory movement. If these decrease, the amount of anesthetic be lessened. "One-lung" cases especially and thoracic operations in general are hazardous because of respiratory difficulty by the condition operated for, *e.g.*, empyema, or by reflex action. In general chloroform to the lightest degree simply to produce analgesia is indicated for such cases. In consciousness the patient usually takes the side where breathing is easiest. Hence, under anesthetics the same position, if possible, should be maintained. With the sound side up, by reversing often pus gravitates in abscess of the lung into the healthy side and fatality issues. In summing up: (1) Every patient has his own respiratory peculiarities with which the anesthetist must become acquainted. (2) Respiration is affected in all somewhat and in many patients profoundly. (3) Such changes may be of small moment or under other intercurrent obstruction may cause much anxiety and danger.

Surgical Aspect of Constipation.—S. L. Woolmer (*Lancet*, June 16, 1900, p. 1720) reports two cases of constipation due to peculiar malformation of the sigmoid colon. In one there was a large pedunculated sac attached to the sigmoid colon in such a way that all fecal matter drained into it. When full its weight constricted the bowel so that "ribbon" feces resulted. Defecation occurred practically by an overflow of it and then imperfectly. The second case had a very extensive enlargement of the sigmoid, so that the rectum appeared like a small bowel attached. Both cases were treated by suspending these offsets so that they emptied themselves and were less apt to fill up.

Wiring in Fractured Inferior Maxilla.—Perfect, firm apposition with opportunity to watch and maintain the same are the desiderata in treating fractures of the lower jaw, says T. S. Carter (*Lancet*, June 16, 1900, p. 1722). Splints are good but usually prevent daily inspection of the field and seeing whether the grinding surfaces of the teeth meet which is the standard by which we judge results. The use of a copper wire silver plated does away with these objections and is the surest way of treating these cases.

Wounds of the Rectum.—Quénu (*Revue de Chirurgie*, May, 1900, p. 569) says that the majority of retal injuries are by way of the anus or through the ischiorectal fossæ and the coccygeal regions. The causes are instruments during operations, treatments and examinations of the rectum, of its adnexa, of the vagina, urethra and bladder. Gun-shot wounds, tools in criminal assault, falls upon implements, and beastly practices make up the other usual means. Several cases of falls upon stumps of corn during harvesting have been reported. Two classes are recognized, gun-shot wounds and all others. Pathologically these are always the result of violence and rupture of the integrity of the peritoneal cavity. The anus is more frequently entered than its cutaneous adnexa be-

cause these are protected by the shape of the buttocks, coccyx and ischial tuberosities which tend to guide the instrument toward the anus. The site of the lesion is usually the anterior wall; its degree varies between abrasion, contusion, partial or complete perforation, into the ischiorectal fossæ or the peritoneal sac. Its depth depends on the direction of the instrument and its arrest by the sacrum. The secondary condition depends upon the establishment of fistulæ between the bowel, the vagina, the bladder and skin surface, and infection through the instrument, primarily itself septic, or secondarily from the rectal contents. The sepsis may be diffuse or more often circumscribed. Fistulæ are by no means an inevitable sequela. The peritoneum may be involved high up in the sigmoid or low down. One or more aspects of the bowel may be involved and, according to the size of the implement, for a variable extent. The serosa may be lacerated only after another viscus has been perforated, as the bladder. The organs secondarily wounded have been vagina, bladder, sigmoid, jejunum, duodenum, diaphragm, anterior mediastinum, and ribs. Within the serous cavities may occur any class and degree of exudate. The symptoms vary with all the possible factors of the case. In the slight traumatisms prompt healing occurs. In the more extensive wounds the cicatrization may be slow, accompanied by discharges, fistulæ and painful defecation. When the wound involves the peritoneal cavity there comes the early or late appearance of local or general peritonitis. Death usually ensues from the peritonitis or septicemia or from shock, which may be such as to mask the other symptoms greatly. The invasion of periproctitis must always be watched for. Wounds and perforations of the bladder give a distinct shadow to the picture, varying between hematuria, cystitis, incontinence, painful urination, the signs of fistula, and at times reflex suppression. The sphincter ani may escape without damage or be partially or completely without full control. The treatment of wounds not penetrating the peritoneum concerns arrest of hemorrhage, asepsis, antisepsis, drainage, primary repair. Hemostasis is difficult in wounds about the vagina and when high up. For the latter posterior division of an otherwise intact sphincter or wide divulsion of the sphincter ani gains space for the ligation of individual vessels. Packing over the bleeding area through a speculum is often sufficient. Allingham's rectal tamponade is very valuable. It consists of a large piece of gauze with strong thread attached to its center. This center is passed high above the bleeding points and the packing is made in the pocket of gauze thus formed. Pressure is increased by traction downward on the cord against counter-resistance from without. Drainage must be free and continuous. If the break in the rectum is from without, suture of the wall is indicated with ample drainage through an enlarged, straightened pocket-free wound in the pararectal tissues. If the bladder is also perforated continuous drainage through a catheter is the indication. A laparotomy must be done in all cases where the peritoneum is torn or any of the pelvic and abdominal organs injured within its cavity. In gunshot wounds of the rectum the vast majority involve a fracture of some part of the pelvic girdle. If this has been respected the path is from one sacrosciatic foramen to the other, or from one to the obturator foramen of the same or opposite side. The chief clinical features of these cases are (*a*) bleeding through the skin wounds or into the rectum, either or both, primary and often insignificant, sometimes fatal, secondary usually grave and apt to be fatal; (*b*) local sepsis commonly apparent at the end of a few days from fecal matter; (*c*) violent suppuration and sometimes gangrene; (*d*) the exit and entrance wounds are puffy and contused, with thick serous or purulent discharge suspending fecal matter, or containing gas and urine; (*e*) vast abscesses of buttocks, thighs or ischiorectal regions; (*f*) systematic signs of gangrenous or septic invasion. The mortality is 42 to 48 per cent. Recovery is slow and complicated with fissures, stenosis, incontinence, various degrees of paraplegia. The treatment is free vent for discharges, evacuation of rectum, division of sphincter with perhaps drainage, opium and milk for constipation to decrease the chance of infiltration. Divulsion of the sphincter is too evanescent to be of much value.

Secondary Cataract.—In at least seventy-five per cent. of all cataract extractions secondary cataracts appear within three months which subsequently interfere more or less with the vision. It has been generally considered that this secondary cataract depends on thickening and opacification in the capsule of the lens. W. H. Bates (*New York Med. Jour.*, July 7, 1900) gives the results of numerous experiments which he has made on the eyes of rabbits, showing that the secondary cataract is not formed by the capsule, but by the formation of new connective tissue in the anterior chamber. It seems that the repeated evacuation of the anterior chamber during the operation for extraction of the lens is followed by the formation of fibrin in the anterior chamber and in the pupillary area, in and about which the connective tissue develops which forms the secondary cataract. By simply evacuating the anterior chamber repeatedly with a hypodermic syringe the same result may be obtained. The reason for the appearance of the cataract oftentimes so late was found to be due to the fact that it was formed early but remained transparent for some time, being gradually replaced by opaque tissue. A number of experiments led the author to believe that the fibrin-forming ferment appearing after evacuation comes not from the cornea but from the blood-vessels and lymph-spaces of the iris and ciliary body. Many substances were injected to prevent the formation of such a cataract and attempts made to dissolve one already formed, but

without avail. It was, however, found that if a quick operation was performed and the contents of the anterior chamber were restored by salt solution the secondary formation could be prevented. A section of the cornea is made and normal salt solution immediately injected. A central corneal suture is then inserted and after free capsulotomy the lens is extracted, the anterior chamber again filled with salt solution and the suture tied. Three sutures or more may be used if necessary. All experiments were conducted upon rabbits, but it is reasonable to suppose that the secondary cataract of man is produced in a similar manner and may be prevented by similar means.

Coccygodynia.—A cure of this condition by removal of the coccyx is stated by M. D. Makuna (*Lancet*, June 16, 1900): Lad, eight years of age; pain over sacrum preventing sleep and sitting erect; emaciation; anorexia; coccyx pointed downward and backward; tip prominent and painful on pressure, touching seat when sitting up; last two segments of the sacrum pointed forward and perhaps pressed in the sacral nerves; perhaps due to malformation, or to malnutrition; no history of traumatism; could not be surgically approached without damaging sacral nerves; nutrition, diet and tonics; then removal of the coccyx, first bending it back out of a median incision, cutting it free with bone forceps and then from above down excising it to save pelvic floor; complete recovery.

Anal Fistula and Phthisis.—Upon this subject S. G. Gant (*Med. Record*, July 7, 1900) makes the following points: The two conditions often are associated generally; the pulmonary precedes the rectal and anal disease; there is no proof that lung tuberculosis can be caused by fistula. Two main varieties are discussed differentially, the tuberculous and the non-tuberculous. The important features of the tubercular fistula are external and internal openings relatively large, triangular, of bluish undermined edges. The adjoining skin of the buttocks is undermined; the hair is abundant, long and silky; the nails are clubbed; facies often phthisical; voice husky, complexion sallow; emaciation rapid and marked; discharge profuse, whitish and watery; probing causes slight pain; anorexia; faulty digestion; sleep fitful and broken by sweating; tubercle bacilli may be in discharge; hemoptysis and cough may be present; anus patulous. The clinical aspect of the non-tuberculous anal sinus is as follows: External and external openings small, round, with red edges, situated in the center of an elevation; buttocks practically normal; hair, nails, face, voice, complexion, nutrition all normal; discharge slight and yellowish; probing painful; appetite, digestion and sleep natural; discharge contains principally colon bacilli; no hemoptysis; no cough, no relaxation of the sphincter. Palliative treatment is applied to non-operative cases, *i. e.*, asepsis, antisepsis, cleanliness, irrigation, mild caustics, good food, tonics, rational hygiene. Operations are best done under chloroform. Opening and curetting is first, excision second in choice. Ligation is obsolete.

Leucemia and Lymphocythemia.—W. Murrell and W. Spencer (*Lancet*, June 16, 1900) report a case of leucemia and lymphocythemia treated by establishing collateral circulation with the following result: January 27, 1900, free evacuation of eight pints of bloody ascitic fluid through median incision between umbilicus and pubis. Free drainage continued till 31st; the tube was removed February 5th; a week later splenic enlargement and recurring ascites; copious albuminuria, and emaciation. February 20th collateral circulation established and gradual improvement followed. March 14th superficial abdominal veins growing larger; a previous mitral regurgitant murmur had become louder and a systolic murmur appeared over the second left intercostal space; albumin absent in the urine; blood improving; April 19th aortic murmur gone, mitral murmur soft and low; June 1st reported in good health.

The Identification of Blood of Individuals.—It has been recognized for a relatively long time that the blood of human beings could be easily and certainly distinguished from that of any other mammal by the size of the red cells, but the attempt has probably never before been made to distinguish the blood of one person from that of another. The importance of so doing can be readily appreciated in connection with medico-legal evidence. W. H. Birchmore (*New York Med. Jour.*, July 7, 1900) has given the details of the apparatus and methods which he has used for some time in making thousands of blood-counts and he has come to the conclusion that he can without hesitancy swear to the fact that two specimens are not those of the same person and can with considerable certainty say that the blood of one stain is the same as that of some other presented. The latter proposition is, of course, the more difficult to prove. The details of the methods used are most elaborate, for exactness and accuracy are everywhere essential, and no one but an expert with long experience could be certain of his results. The sources of error are many for the discrepancies in the best of eyepiece micrometers are oftentimes very great. The personal equation must also be fully considered. The author believes, however, that by making a large number of blood-counts and plotting the results into curves opinions of considerable legal value can be given.

Cardinal Sign of Acute Peritonitis.—E. S. Bishop (*Lancet*, June 9, 1900) says the symptoms of peritonitis, usually described in the books, may or may not be present and, therefore, permit one to hesitate as to the diagnosis. The sign which is always present and is invariably indicative of acute peritonitis is rigidity of the abdominal muscles. The examination must be carefully made. A cold hand causes spasm of the recti, but not true rigidity. The surgeon must sit, the

hand must be warm and must be very lightly placed flat on the abdomen for a few moments and then gently moved to and fro. A moderate experience will enable one to determine the presence or absence of rigidity in this manner. This sign is positive, is objective, and is not modified by the personal equation of the patient.

Puerperal Toxemia.—In discoursing upon the treatment, preventive and curative, of eclampsia, J. C. S. Gauthier (*La Revue Médicale*, p. 361) mentions the value of chloral, bromide of potash, phlebotomy, milk diet, steam baths, etc. But special attention should be given to the use of the fluid extract of veratrum viride in small hypodermatic doses for the reduction of the cardiac excitement, arterial tension, renal congestion, and cutaneous inaction. All these indications are met more or less completely by the drug alone in doses of ten to fifteen drops. Hypodermatoclysis and enteroclysis in addition not only stimulate a failing, overtaxed circulation, but eliminate actively through the skin and kidneys the toxic products, really aiding the drug very distinctly and often definitely combating its bad effects. For a long time serum by injection or transfusion has been employed to combat nervous shock, surgical or accidental, and hemorrhages, postpartum and traumatic. In fact, the final effect of veratrine is nervous shock, a bleeding without loss of blood, accompanied by collapse, cold perspiration and emesis. Hypodermatoclysis acts more promptly than enteroclysis and lacks the dangers of venous transfusion and the difficulties this presents to the average practitioner. Under the influence of this prompt therapeutic measure the heart soon recovers, the normal arterial tension recurs, the emesis ceases and diuresis soon appears. In general, forced delivery as an item in the treatment of all cases of eclampsia is to be condemned, because septicemia too often supervenes. Energetic medical treatment with remedies of approved value has usually succeeded in the writer's hands. Still further, he claims that all microbic infections can be treated in this manner, puerperal septicemia, typhoid fever with hemorrhage, enterocolitis and green diarrhea in the newly-born, and all cases in which antisepsis of the lower bowel is wanted. The concluding points are: Enteroclysis produces prompt elevation of the arterial tension; the maximum of this increase occurs in about ten minutes; diuresis after a rectal injection of hot saline solution (110°—120° F.) begins with and accompanies the arterial tone, and the thermal reaction also occurs at the same time.

Vasomotor Conditions in Cardiac Disease.—In many cases of cardiac disease far greater relief can be given to the patient if treatment be directed to the condition of the blood-vessels rather than by treatment which influences the heart-muscle itself. In a leading article of the *Therapeutic Gazette* for May, 1900, the importance of the vasomotor system is brought forward and attention is drawn to the cases of valvular disease in which should a high arterial tension be present, regurgitation would most certainly be increased. Such valvular lesions of both mitral and aortic valves are frequently met with. It would be the height of folly to administer large doses of digitalis in these cases, and yet how often do we see this done! The proper drug here indicated is nitroglycerin which will diminish the quantity of work done by the heart by lowering the arterial tension. In cases where arterial tension is not very high, it will be found that from three to five grains of iodide of sodium or iodide of potassium every six hours for several days will prove of great advantage. The benefit derived from these iodides in the repression of arterial tension warrants their use for a long period. Where the arterial tension is suddenly lowered, as in surgical "shock," or collapse, vasomotor relaxation takes place. Here it is highly important to combat the condition by improving the vascular tone. This is best done by atropine which in addition to stimulating the heart will also cause the resistance to be restored which the organ is acustomed to meet normally. It will be found in all cases of vascular or circulatory trouble, whether due to high arterial tension or vascular relaxation, that particular attention directed to the blood-vessels will prove of great value.

Incarcerated Retroflexed Gravid Uterus.—The symptoms and diagnosis of this condition are as a rule easy, especially with the aid of anesthesia, says C. Reinecke (*Münchener med. Wochenschr.*, June 19, 1900), but the treatment is all important. Free evacuation of the bowels by enemata; complete emptying of the bladder by catheter when possible, by aspiration when necessary; bimanual reposition *per rectum* or *per vaginam*, not in the middle line directly past the sacral promontory, but rather to one side of it to gain space; the abdominal hand receives and perfects the reposition; lithotomy position in simple, genupectoral posture in the difficult cases; anesthesia if necessary; pessaries to combat relapse until the fifth month; abortion if all other means fail. The after-treatment consists of rest in bed, regulation of diet and functions, and, most important, frequent emptying of the bladder to avoid its backward pressure.

Albuminuria Following Renal Palpation.—C. Menge (*Münch. med. Woch.*, June 5, 1900) has seen renal hematuria with albuminuria in several cases in which the kidney had been examined bimanually and in which no albumin had been present in the urine before examination. He explains this phenomenon by assuming that the pressure to which the kidney is exposed causes circulatory changes which permit of the transudation of serum from the renal capillaries. Certain factors are of importance in determining the degree of albuminuria; thus, the duration of the palpation, the general condition of the patient, the rigidity of the abdominal muscles and the degree of nephroptosis present all modify the amount of albumin.

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PLAGUE AND THE CHINESE IMBROGLIO.

The present excitement in the Far East, if it leads to the neglect of quarantine precautions, may prove to Europe and the United States a source of serious danger from an unexpected quarter. According to the latest reports Hong Kong, where the present epidemic of plague began in the spring of 1895, is still infected by the disease. There have been great variations in the virulence of the epidemic and at times it has seemed as though the city were rid of it, but the gratulatory sense of security has always proved illusory. The district of Kowloon on the Chinese mainland, opposite Hong Kong, is also infected. At Macao, a Portuguese possession thirty miles southwest of Hong Kong on the China coast, there were 150 deaths from the plague during April, nearly 200 in May, and as many more are estimated to have occurred in June. On the island of Formosa off the Chinese coast there have been nearly 300 deaths from plague during the last four months.

It is evident, then, that it is no exaggeration to say that the seeds of a serious epidemic of plague may be scattered broadcast before the present Chinese difficulties reach their solution. All of our Western coast especially will need to be most carefully guarded. We have attained during the last year a knowledge of the virulence of the present epidemic of plague that does away with the idea, so long prevalent, that the disease is liable to attack with severity only the native population of Eastern countries. It took Oporto, in Portugal, over seven months to rid itself of infection and even then, after freedom for four months, there is a recent announcement of the recurrence of the disease. Buenos Ayres is still suffering from the disease and last week the official report from Rio Janeiro showed that 25 new cases of the disease and 12 deaths had occurred. In addition to the places named, plague now exists at Aden, Port Said and Alexandria on the Red Sea, in many of the seaport towns of Australia, at Manila, at Honolulu, at Lorenzo Marques in South Africa, and at Mauritius.

The recent circular of the surgeon-general of the United States Marine-Hospital Service advised insistence upon a fifteen-day quarantine where ships come from plague-infected ports or are suspected of possible contact with the disease, instead of the ten-day quarantine that was recommended by the International Plague Convention of Venice, held three years ago. This recommendation has ample justification in the fact that the introduction of plague in many places seems to have been due to too short quarantine.

The feature of prophylaxis that is attracting most attention in Australia is the destruction of rats in seaport towns. Despite the most careful precautions plague has found its way through sanitary cordons and, as the Sydney correspondent of the London *Lancet* says, has spread like a grease-spot ever farther from the original focus. The rodents have been the carriers of the disease. It is to the rats also that recrudescences of the disease are due after a city seems free, and has not suffered from freshly imported infection.

Practical measures for the limitation of the number of rats are well worth serious consideration. Efforts to infect them with special diseases to which rats alone are liable have in Australia, at least so far, been attended with no great success. Bounties have been freely offered for the destruction of the rodent pests and by this means their numbers have been greatly reduced. With our present sanitary regulations the introduction of the disease into any of our cities need be matter for no serious concern except for the presence of so many of the rat tribe.

Plague is a rat, rather than a human, disease. It might easily get beyond sanitary control if a city's rats should become infected. Now that plague is spreading and is liable to spread still more, the reduction of the rat nuisance in all our seaports seems to be a simple matter of plain sanitary duty.

THE MOSQUITO AND RECRUDESCENCE OF MALARIA.

There have been made during the last ten years some interesting observations with regard to the recurrence of malaria in localities where for many years endemic cases of the disease had not been observed. In Chicago, as the result of the turning up of the soil for the foundations of the World's Fair buildings, a number of cases of genuine malaria microscopically diagnosed occurred, although malaria had ceased for many years to be considered as one of the city's diseases. In New Haven, from the excavations for the foundations of the new university buildings recently, the same state of affairs asserted itself. Malaria became once more a factor in the city mortality.

From the vicinity of Boston a similar occurrence is reported. In order to make a cutting for a railroad, some hundreds of Italians were brought into a neighborhood where for many years no cases of malaria had occurred amongst the inhabitants. Some of the foreigners suffered from malaria while the earth was being dug up. Shortly afterward cases of malaria developed in individuals who had never been out of the neighborhood and who had evidently acquired their infections as the result either of the fresh turning of the soil or of the presence of the Italians or both.

These facts have been advanced as rebutting the mosquito theory of the spread of malaria. According to them the disease seems to be rather the result of a miasm, that is, some toxic material living or non-living that finds its way into the air of a neighborhood after the soil has been freshly turned up from some considerable and more than usual depth. The idea that such turning up of soil can produce malaria in a region hitherto unaffected has long prevailed. It is apparently substantiated by a long series of most careful observations.

It is interesting, then, to have pointed out by malarial experts who have given the question serious study, that these recent observations on the connection between excavations and the apparent origin of malaria *de novo,* far from subverting, tend rather to confirm in a very striking way the mosquito-bearing theory of the disease. The ordinary and most common mosquito, scientificially known as Culex pipiens, does not carry the malarial plasmodium. Anopheles, the malaria-bearer, requires special conditions for its development. One of them, and the essential one for the evolution of this mosquito, is stagnant water. Culex requires from twenty-four to forty-eight hours existence in water during its larval stage. Anopheles requires eight to ten days or more. For the full development of Anopheles, then, an ordinary puddle that the sun will dry up in two or three days is not sufficient, although it will serve all the developmental purposes of the ordinary mosquito. It is in deep excavations that such pools of water remain and so it is after deep turning up of the soil that malaria seems to develop anew.

In any thickly-populated neighborhood some cases of relapsing malaria may unfailingly be found. The hematozoon seems to lie more or less dormant for years in the spleen of certain patients who have contracted malaria. Such patients are prone to suffer in the spring especially from acute exacerbations of their chronic malaria which have all the typical symptoms of a recent infection. It is from such cases imported into a neighborhood that the mosquito obtains the parasites that are later distributed to those who have not had malaria.

Despite the tradition of centuries as to the miasmatic origin of malaria, it is growing clearer every day that no distributing agent for the disease exists except the mosquito.

It has been the custom to advance certain physical factors to account for the spread of infectious disease; air, moisture, wind, water, and climate have all been supposed to be prominent elements. As a matter of fact scientific studies in pathogenesis are impressing the view that physical factors play an extremely unimportant rôle in the spread of disease. Even for rheumatism the tradition of dampness as a causative element is dying out. Nearly always disease is spread by some animal agency, either by man himself or some of his parasites or pets. Malaria is not the last disease whose distribution will prove to be due to some hitherto unsuspected animal agency.

OBITUARY.

Alexander J. C. Skene, M.D., LL.D.

Dr. Alexander J. C. Skene of Brooklyn died July 4th at his summer home, Highmount, in the Catskill Mountains. He had been suffering for some time from occasional attacks of angina pectoris, but nothing was suggested by his condition to cause his family or his friends concern.

Dr. Skene was born in 1838 in the Parish of Fyvie, Aberdeenshire, Scotland. He came of a noted Scotch family, many of the members of which had been closely identified with much of the history of Scotland. The Skenes were a race of warriors, statesmen, and professional men. The boyhood of Dr. Skene was spent in his native village. He came to this country when nineteen years old. He took a deep interest in the medical profession, and soon after his arrival he entered the University of Michigan. From there he went to the Long Island College Hospital in Brooklyn, from which institution he graduated in 1863. He offered his services to the Government in the Civil War and went to the front as a surgeon. While with the army he evolved a plan for a hospital corps which to-day is in use in the army and the National Guard.

After the war Dr. Skene returned to Brooklyn and was appointed Adjunct Professor at the Long Island Medical College. He soon became noted as a diagnostician, and successful operator. He later became Professor of Gynecology and was for a long time Dean of the Long Island Medical College. He retired from the faculty about a year ago. Dr. Skene has been honored with the presidency of the New York Obstetrical Society and of the American Gynecological Society. He was also for many years President of the Kings County Medical Society.

Dr. Skene's contributions to medical literature have been many and valuable. His investigations into the injuries of the ureters due to parturition and the ravages of gonorrhea in the urethra and the peri-urethral glands, and hence known as Skene's glands, were characterized by original work. His text-book on diseases of women quickly marked him as an authority upon that subject and made his name familiar on both sides of the Atlantic.

Of late Dr. Skene had been devoting much of his time to arrangements for the establishment in Brooklyn of a free hospital for women. This institution, which was to be known as the Skene Hospital for Self-Supporting Women, he expected to open this fall. It is now hoped that the project will be carried forward to completion as a memorial to him.

Dr. Skene was a lover of art and was himself a sculptor of ability. He is survived by his wife and an adopted daughter.

John Ashhurst, Jr., M.D.

Dr. John Ashhurst, Jr., died at his home in Philadelphia on July 7th, from paralysis. He had been ill for nearly two years. He was born in Philadelphia in 1839, and was graduated from the University of Pennsylvania in 1860. He served throughout the Civil War as an assistant surgeon, and later became connected with various Philadelphia hospitals. In 1877 Dr. Ashhurst became Professor of Clinical Surgery in the University of Pennsylvania, and in 1888 he assumed the John Rhea Barton Professorship of Surgery, which position he held until the last academic year. Dr. Ashhurt's reputation as a writer was national. His pamphlet contributions were numerous, but he was best known by his valuable standard works on surgery. He was also prominent in scientific societies, charitable institutions and in church work.

ECHOES AND NEWS.

NEW YORK.

High Death-Rate Among Infants.—To the continuation of the hot weather is attributed the high death-rate among children during this month. For the first six days of July the deaths reported of children of five years old or under averaged 53 in Manhattan and the Bronx and 41 in Brooklyn. Saturday's report (July 7th) showed 51 deaths of children under five years in Manhattan and the Bronx, and 58 in Brooklyn. Sunday's (July 8th) list included 45 such deaths in Manhattan and the Bronx.

A Wealthy Pauper Patient.—One of the odd phases of human character brought to light in Bellevue Hospital came to the attention of the authorities on July 6th, in the case of Susan Fallon, eighty-five years old, who was brought there as a charity patient from her squalid rooms in East Twenty-second Street. The old woman was suffering from jaundice, was in rags and tatters, and having not a relative in the world to care whether she lived or died. The neighbors reported her case to the hospital. After she had been placed in a hospital-cot her clothing was searched according to the rules of the institution. Two bank books were found, one on the Seamen's Bank, showing a deposit of $1,261.24, the other on the Bowery Bank, and showing a credit of $921.75.

Death of Dr. Humphreys.—Dr. Frederick Humphreys, originator of "Humphreys's Homeopathic Specifics," died, July 8th, at Monmouth Beach, N. J. He was born in Marcellus, Onondaga County, N. Y., on March 11, 1816. His father, Erasius Humphreys, was an old-time doctor of Utica, where his son, after going through the usual medical studies, joined him in practice in 1844. Before these studies began, however, the young man had tried the ministry for a short time. In 1846 he began to investigate homeopathy, and in 1853 he became Professor of Homeopathic Institutes and Practice of Medicine in the Homeopathic College of Philadelphia. There he remained until 1856, when he discovered

his "specifics," after which he came to New York and inserted a page advertisement in every Saturday newspaper edition. Dr. Humphreys was a member of the Union League, Republican, and Church Clubs, and of the Protestant Episcopal Church of the Heavenly Rest. During recent years he had lived either at his city house, 22 West Thirty-ninth Street, or in his summer home at Monmouth Beach, N. J., or in Thomasville, Ga., where he had a winter residence.

Dr. Pedersen Appointed.—Dr. Victor C. Pedersen has been appointed Assistant Demonstrator of Anatomy at the College of Physicians and Surgeons, and Assistant Surgeon to the Out-Patient Department of Roosevelt Hospital.

New Charity Buildings.—Horgan & Slattery have advised the State Board of Charities that they have completed the preparation of plans of new buildings for the Department of Public Charities of the City of New York. Following is a list of the appropriations made and the names of the institutions for which plans have been submitted: New nurses' home at the Almshouse, Blackwell's Island, $40,000; Nurses' Training School addition at City Hospital, $42,000; Water-tower extension to Metropolitan Hospital, $10,000; New gas-holder at Infants' Hospital, Randall's Island, $10,000; New boiler plant at Infants' Hospital, Randall's Island, $12,000; New central steam plant at Randall's Island, $50,000; New nurses' home at Randall's Island, $30,000; total, $194,000. None of the work contemplated can begin until the plans submitted have been approved by the State Board of Charities.

Italian Quarter Disinfected.—The Italian quarter on the east side recently received one of the most thorough disinfections it has ever experienced. Nearly the entire Health Department squad of police, together with twenty laborers handling the disinfectant, visited every building on Elizabeth and Mott Streets above Grand, and then went through Crosby Street and the Italian colony on Baxter Street. It is estimated that 1000 houses were disinfected. The policemen, who were assigned to districts, went before the sprinklers and had the courtyards and cellars cleaned up. The sprinklers followed in two sections, one crew in charge of Dr. Blauvelt going up Elizabeth Street, and the other, in charge of T. H. White, Assistant Inspector for Contagious Diseases, taking in Mott Street. The money for the work will come out of an appropriation of $20,000 recently made by the Board of Estimate and Apportionment for the purpose. Other crowded sections of the city are to be visited during the summer, including the Chinese quarter.

Contagious Diseases.—For the week ending July 9, 1900: Measles, 179 cases and 16 deaths; diphtheria, 232 cases and 36 deaths; laryngeal diphtheria (croup), 6 cases; scarlet fever, 76 cases and 8 deaths; smallpox, 1 case; chicken-pox, 6 cases; tuberculosis, 217 cases and 136 deaths; typhoid fever, 25 cases and 10 deaths; cerebro-spinal meningitis, 6 deaths; totals, 742 cases and 212 deaths.

Barbers Must Disinfect.—The Board of Health of Yonkers has passed a duplicate of the Boston regulation which directs every barber after treating each customer to disinfect, in a manner satisfactory to the Health Inspector, his razor, strop, brushes, cup and comb.

The Pan-American Exposition.—The management has entrusted the Department of Ethnology and Archeology to Dr. A. L. Bishop of Buffalo. Many members of the medical profession are interested in the study of American Ethnology and Archeology and not a few have valuable collections of Indian relics and skeletons from Indian graves. Those not directly interested in this study are so circumstanced as to be aware of the hobbies of their neighbors and could doubtless furnish the address of collectors. Dr. Bishop will be greatly obliged for such information and for the loan of collections for the use of this department of the Exposition. Exhibits which represent study in some special line of American Ethnology or Archeology will be particularly suitable.

Broken Necks.—It is doubtful if accidents resulting in this injury are any more common than formerly, but the success that has been attained in the prompt surgical treatment of the condition has attracted unusual attention to the injury. The chances of recovery are slight in any individual case. John Young, who suffered fracture of the cervical vertebra in diving at South Beach, July 5th, was subjected to operation at the Smith Infirmary, Staten Island, but died within twenty-four hours.

Echoes of the "Fourth."—It is said that the Fourth of July just past was more generally and generously observed than for many years. The weather was fine and prosperity favored a free expenditure of money. Seven millions of dollars, it is estimated, went up in the blaze and smoke and noise of fireworks. It was quite a Chinese affair. Fingers, hands, eyes and lives were freely sacrificed. In Philadelphia seven children in one group lost their lives while indulging in these Oriental orgies. At one east-side dispensary in New York 350 cases of burns and gunshot wounds were dressed on July 5th. Only two cases of tetanus have thus far been reported, but it will be surprising if the next few days do not add a score to this list. The almost daily showers, however, have kept the streets of the city unusually clean and the tetanus bacilli correspondingly scarce.

PHILADELPHIA.

Medico-Chirurgical College.—Dr. F. Savary Pearce has been elected Clinical Professor of Nervous Diseases. He is at present an instructor in physical diagnosis at the University of Pennsylvania.

Outbreak of Smallpox.—A small epidemic of

this disease lately developed near Olney. Five patients were removed to the Municipal Hospital and the infected district quarantined. It is believed that the spread of the disease has been stopped.

Children's Country Week Association.—A special train every Thursday morning during July and August will take hundreds of children to the country for a week. Ten are sent to each farm, it being stipulated that they shall have fresh meat once a day, all the milk they want, and plenty of vegetables. The children pass a physical examination before they go, convalescents and invalids staying in the country two or more weeks.

Pollution of Water-Supply.—The secretary of the State Board of Health has notified the authorities of Norristown that an examination of the water-supply of Philadelphia shows it to be contaminated and that the most serious cause is the deposit of sewage by that city. The courts are to be appealed to if the nuisance is not abated.

Experimental Filter Plant.—This start toward a pure water-supply for the city, which was to have been completed by May 26th, is not yet working. A chemical and bacteriological laboratory is to be equipped to analyze both the inflowing and outflowing water. It is believed that sand adapted to the water to be filtered can be secured.

Compulsory Vaccination.—A decision has been rendered in the mandamus proceeding to compel the principal of a city school to admit a child who had not been vaccinated, as mentioned in this column some weeks ago. The demurrer was overruled and judgment given for the defendant. This decision upholds the legality of compulsory vaccination in the schools.

Health Report.—Deaths in the city for the week ending July 7th were 544, an increase of 47 over those of last week and of 109 over the corresponding week of last year. Heat prostrations were largely responsible for the increase. The infant-mortality was very high, 157 deaths. Contagious diseases: Diphtheria, 94 cases, 18 deaths; scarlet fever, 44 cases, 2 deaths; typhoid fever, 25 cases, 8 deaths.

CHICAGO.

Passavant Memorial Hospital.—By the will of the late T. B. Blackstone, $25,000 has been left to this Hospital; $25,000 to St. Luke's Hospital, and $25,000 to the Chicago Relief and Aid Society.

Commencement Exercises.—The Commencement Exercises of the German Hospital Training School for Nurses were held June 26th, and those of the Harvey Medical College, June 22nd. Degrees were conferred on a class of seventeen by Dr. Frances Dickinson, the President.

Fourth of July Casualties.—The Fourth of July in this city was attended by less than the usual number of accidents and deaths. One man was killed by a stray bullet, and forty-four were injured by fireworks during the day. There were ten prostrations and seven deaths caused by the heat.

City Health Matters.—At the present writing there are 12 smallpox patients in the Isolation Hospital. All of them are doing well, with the exception of one case. None of the patients has ever been vaccinated. Of the 59 smallpox patients who have come under the notice of the Department during the last sixteen months not one had a mark denoting successful vaccination. Four smallpox patients were taken from one house on June 16th and 17th, members of one family, none of whom had been vaccinated. Four other members of the same family and a number of neighbors who had been vaccinated were exposed again and again before the nature of the disease was appreciated, and none contracted the disease. At the suggestion that probably some of the cases of smallpox now being treated at the Isolation Hospital were the result of exposure by the patients before reaching Chicago, Commissioner Reynolds says that many of the cases undoubtedly are the result of such experiences.

A Diploma Mill.—To teach "How to live one hundred years or more in good health and to confer degrees and grant diplomas" are some of the objects for which a Chicago concern was recently chartered by the Secretary of State. The attention of the State Board of Health is now called to the corporation, which was licensed under the name of the "Chicago College of Medicine, Surgery and Hygiene." A directory company of this city wished to know the standing of the college before selling it advertising space in a new directory that is soon to be issued. Previous to the communication from the directory company, Dr. Egan of the State Board of Health was unaware of the existence of the institution, but immediately took steps to ascertain the purpose for which the college was chartered. The certificate of incorporation gives the purpose of the college in the following language: "For the purpose of training students in the science of life, hygiene and sanitary science, and the care of the body in sickness and in health, and for instructing and training in physical development to fullness of health, beauty and attractiveness; and for the correction of habits and modes of living tending to shorten life and making chronic invalids; and for special instructions how to live one hundred years or more in good health; and to confer degrees and grant diplomas." In his reply to the directory company Dr. Egan said the name of the institution resembled that of another medical college in Chicago which is a reputable institution and recognized by the State Board of Health, but that the Chicago College of Medicine, Surgery and Hygiene, in the knowledge of the Board of Health, has no standing.

Spectacles Prohibited at the Asylum.—It is said that 40 of the women attendants of the Eastern

Illinois Insane Hospital, every one of them wearing glasses, were recently called before the Superintendent, Dr. J. C. Corbus, and notified that he would dispense in the future with the services of such of their number as were compelled to wear glasses while at work among the patients. The Doctor's reason for not allowing the attendants to wear glasses is that they expose themselves to the danger of being seriously injured, perhaps blinded, during an attack by some violent patient. A similar order is expected with reference to the male attendants who wear glasses.

GENERAL.

The Hospital Ship "Maine."—The American hospital ship "Maine" reached Southampton July 3d, with another batch of wounded soldiers from South Africa. A distinguished party, including Princess Louise, Lady Randolph Churchill, and Mmes. Blow, Ronalds, Adair, and Chamberlain, met her in the Solent. Princess Louise, after addressing a few kindly words of welcome to the patients on board, presented each with a silver medal bearing a portrait of the ship, surmounted by American and British flags. Each man was presented also with a pipe and a pound of tobacco.

The British Losses.—The War Office July 3d issued a return of the British casualities in South Africa since the beginning of the war. The total losses, exclusive of sick and wounded, have been 29,706, of which the killed in action were 254 officers and 2403 non-commissioned officers and men; died of wounds, 70 officers and 610 non-commissioned officers and men; missing and prisoners, 65 officers and 2624 non-commissioned officers and men; died of disease, 133 officers and 4204 non-commissioned officers and men, and invalided home, 844 officers and 18,433 non-commissioned officers and men.

Notice.—The following is presented at the request of Dr. Roberts: All surgeons, assistant surgeons, acting assistant surgeons or contract surgeons, and hospital stewards, who served in the army or navy of the late Confederate States, will please send their post-office address to Deering J. Roberts, M.D., Secretary Surgeons' Association, C. S. A., Nashville, Tenn.

Marine Hospital Service and the Plague.—In accordance with the recommendations made by Surgeon-General Wyman, November, 1899, medical officers of the Marine-Hospital Service were sent as advance guards to meet the plague and if possible prevent its reaching our shores, to the offices of the United States consuls at Glasgow, Liverpool, London, Southampton, Queenstown, Hamburg, Bremen, Rotterdam, Antwerp, Havre, Marseilles, Naples, and Genoa. The services of these officers in foreign ports have been valuable, but the emergency has not been sufficient to warrant the expense of maintaining all of them abroad. It is, therefore, proposed to withdraw them from the offices of the United States consuls at the several ports, excepting Naples, but, for the purpose of observation and of maintaining a skeleton organization, to assign four of the officers now serving in Europe to Berlin, London, Paris, and Vienna.

South African Hospital Scandals.—The pressure of public opinion became so strong that the Ministry was obliged to yield to the demands for an investigation, and a commission of five, including two doctors, has been appointed. The Commission will be directed to inquire into the facts on which the charges rest, to fix the responsibility and to make suggestions for the reform of the Army Medical Service. The physicians who have been made members of the Commission are Dr. Church, President of the Royal College of Physicians, and Prof. D. J. Cunningham.

Distribution of Goiter.—Dr. Poncet of Lyons recently communicated to the Academy of Medicine the results of researches made on the present distribution of goiter in France. He estimates the number of goitrous persons roughly as between 375,000 and 400,000. These are not by any means evenly distributed all over the country; on the contrary a small group of departments are responsible for an unduly large proportion, notably those bordering on the Alps, the Pyrenees, the Jura, the Vosges, and, lastly, the central plateau. He states that the number of goitrous persons has notably diminished, especially during the last fifty years, but the distribution has not undergone any marked change.—(*The Medical Press.*)

Manila Saloons.—We predicted just what has come to pass. When the Volunteer chaplain, the Rev. Mr. Wells, on his return, was made responsible by the papers for the statement that one of the results of American occupation has been an increase of saloons from four to more than four hundred, we ventured to prophesy that local corroboration would be decidedly lacking. The Manila *Freedom* of April 21st thus disposes of Chaplain Wells's statement: "We have taken some pains to investigate this charge, and have to say that it is false in every sense. When the flag was first planted in Manila there were between four and five thousand grocery shacks, kept by Chinos and Filipinos, and every one of them sold liquors, a native product, which did more to fill graves than disease and bullets. They were not saloons but grog-shops, insidious hell-holes, and many soldiers became victims of them. Vino and other native drinks could be purchased for one cent a drink, American money, and ten cents was a sufficient sum for a common drunk and a penny or two more a bacchanalian revel. Governor-General Otis had this problem to solve during the early days of occupation, and he was happily successful in closing most of the Chino and native shacks. A license system was established and the American saloon took the place of the native saloon. With their establishment the death- and insane-rates have been less, and the greatest good to the great number has thus been subserved. Instead of over 4000 places where liquors were sold we

now have less than 400, and the quality of the stuff is vastly better and the quantity less. Insidious effects of vino and native gin soon alarmed physicians and surgeons, and an order was issued to seize and destroy all of said products found. This practically eliminated their manufacture, and to get them is as difficult as it is to get liquors in the veriest prohibition town of Kansas. Hail the reform!"—(*Army and Navy Journal.*)

War Surgeons and War Physicians.—Now that the serious engagements in the South African war seem to have been about completed, *The Practitioner* promptly foresees that the attention of the army surgeons will be directed more to a medical than a surgical line. It, therefore, proposes to substitute for the consulting surgeons, who returned from the seat of war, an equal number of consulting physicians. *The Practitioner* has claimed from the first that consulting physicians are equally as important as consulting surgeons.

Mortality in India.—The Governor of Bombay telegraphs to the Foreign Office, July 9th, as follows: "There were 10,320 deaths from cholera and 6502 fatalities in the famine district during the last week in June. The total deaths among the numbers on the relief works in the British district were 5324. The number on the relief works is increasing rapidly in consequence of the drought. The number of gratuitous relief is increasing throughout the affected districts. The number of persons receiving relief is 6,013,000."

Hygiene in the British Army.—Mr. Treeves tells us that Dr. Jameson says that the only way to deal with South Africa water is to boil it, strain it, filter it, and then throw it away. Colonel Baden-Powell, on the other hand, has a unique recipe for securing aseptic water (which is not aseptic) for wounds, as follows: "Take an ordinary native girl, tell her to go and get some lukewarm water and don't give her anything to get in. She will go to the stream, kneel and fill her mouth and so bring the water; by the time she is back the water is lukewarm. You then tell her to squirt it as you direct into the wound, while you rinse it around with a feather." What does Lord Lister think of the asepsis of this method?

SELECTION.

HAFFKINE INOCULATION IN SAN FRANCISCO.[1]

THE following letter very clearly sets forth the attitude of Surgeon J. J. Kinyoun toward the inoculation of persons in San Francisco with Haffkine prophylactic, and shows that compulsion was not only avoided by him, but advised against, as an unwise and illegal measure:

[1] From the Public Health Reports of the Marine Hospital Service, July 6, 1900.

SAN FRANCISCO QUARANTINE,
San Francisco, Cal., June 11, 1900.

SIR:—On receipt of Bureau telegram of the 15th ultimo, directing me to confer with the Chinese consul-general as Bureau representative in the matter of the plague in the Chinese quarter, I have the honor to state I immediately called upon the Honorable Ho Yow, consul-general, and stated to him all the facts relative to the plague which had come under my observation or which had been brought to my notice by the local board of health. During this interview Mr. John Bennett, attorney for the consul and the Six Companies, came in and took part in the discussion. After thoroughly canvassing the matter, it was agreed by all the parties that the most reasonable solution of the question was to advise all the Chinese residents living in the infected area to submit to inoculation with the Haffkine prophylactic. I was informed both by the consul-general and the attorney that they would make such recommendations to the Chinese residents and that they would aid and cooperate with the board of heallth in carrying this scheme into effectt.

By direction of the Bureau, on the same day a few hours later, I attended a meeting of the Merchants' Association which met for a conference with the local board of health. The purpose of this meeting was intended to devise ways and means to assist the board in suppressing the disease or preventing its spread. The attorney of the Chinese Six Companies was present at this conference. The telegram received from the Bureau which made certain recommendations regarding the control of the plague was fully and freely discussed, and the main features thereof were adopted as the sense of the meeting. The impression which seemed to prevail at the close of the meeting was that the Chinese and Japanese would gladly avail themselves of inoculation in order to obviate the necessity of enforcing more severe measures.

I ventured, however, to suggest to both the board of health and the Merchants' Association that while I believed from a scientific standpoint it was the proper way to suppress a plague epidemic, I had grave doubts whether the Chinese and Japanese populace would be ready to accept it, notwithstanding it was to be recommended by those in authority. *Compulsory inoculation* was the only recourse *and that could not be considered.* The attorney for the Chinese thought if a conference could be had between the representative men of the Six Companies, the consul-general, the Merchants' Association, and the board of health, that it would be an easy matter to arrange and have it carried into effect. This conference was held on the following day at which was present the consul-general and about fifty or sixty of the representative men of the Chinese Six Companies.

The Chinese all agreed that they would recommend, by proclamation or otherwise, the acceptance of the method of inoculation. Surgeon

Gassaway was present at this meeting. I was not able to be present on account of my absence in Stockton. At the close of the meeting it was understood by the board as well as others that there would be no opposition by the Chinese to accepting vaccination. As soon as the result of this conference was made known a number of whites, among whom were several physicians who practised in the Chinese quarter, went among the Chinese and informed them that this method was exceedingly dangerous and had killed a number of people where it had been tried, and it was experimental, to say the least. Officers of the Chinese Six Companies were approached, and the statements made by these parties seemed to have the desired effect.

Immediately thereafter large numbers of Chinese residents came to the offices of the Six Companies for the purpose of ascertaining the purport of this inoculation and why it was put into effect. They were informed that the board of health had said plague was present in Chinatown, and this was the best means of eradicating the disease. Demands were made immediately upon the officers of the Six Companies that if it was not dangerous as claimed that they should first submit themselves to inoculation. This they refused to do, and immediately thereafter there occurred almost a riot. In fact, the officers of the Six Companies were besieged in their houses; some of whom, I am informed, had to seek safety in flight.

The same course of procedure was followed with Mr. Ho Yow. About 700 Chinese gathered before the consulate, making riotous demonstration, and had it not been for adequate police protection some harm might have resulted other than smashing a window glass. At 8 o'clock the same day a circular written in Chinese characters was freely circulated in the Chinese quarter. The purport of this circular was that all Chinese were requested to resist to the utmost the inoculation, and under no circumstances to allow it to be performed. On Sunday afternoon, May 20th, I was requested to come to the consulate to confer with the Chinese consul. Accordingly I arrived there in the afternoon and met Mr. Ho Yow and a number of the representative Chinese, among whom were several officers of the Six Companies. I was informed that unforseen difficulties had arisen by reason of the circular threatening Chinese business men and others if they submitted to the inoculation, and they found it impossible to persuade the Chinese to accept the inoculation.

I was asked the authority for this action. I informed them that it was a suggestion made by the Surgeon-General, and it was in nowise to be considered as obligatory and only a voluntary act on the part of the Chinese who wished to accept it. I further informed these gentlemen that there was no desire whatever on the part of the Government or on the part of the local board of health to inflict unnecessary hardship upon their people, and the motives that actuated them to make this restriction on the Chinese as a class were the best and could not be questioned. I then informed them that if this disease was not brought immediately into abeyance it would probably lead to harsher measures being instituted not only by the board of health, but by all other health bodies in the State and perhaps surrounding States. It was my earnest desire, as the representative of the Marine Hospital Service, to prevent this if it was in anyway possible. It was observed that the consul and his subordinates were much excited, and on making inquiry from same I found that a large number of Chinese had gathered in front of the consulate and commenced to throw stones at the building. At the request of the clerks I called for the police, who immediately came and dispersed about 1000 Chinese who had assembled in the street in front of the building.

I was informed by the board of health that preparations were immediately put into effect by which the inoculations would be given coincident with the house-to-house inspection, which was then deemed necessary. On the morning of the 19th a corps of physicians, with assistants, began a tour of inspection in the Chinese quarter, offering the inoculation. Every business house and residence was closed. The inspection existed only in name. I was informed that only 1 Chinese was inoculated during the day. This was the editor of the Chinese daily newspaper, who thought he could overcome the prejudice of his race by openly submitting to the inoculation. Immediately on its completion he was attacked by a mob, threatening dire vengeance, and he had to seek his quarters, where he remained for three days.

I was informed that the Chinese Highbinder element was responsible for the Chinese attitude toward the inoculation, and that they had threatened dire vengeance upon any one who would advocate inoculation or submit to it. It was evident that the Chinese race was acting as a unit and would not under any circumstances submit to inoculation. This was evidenced from what transpired at the ferries here. Chinese were brought immediately from the vessels and informed that in order to go in and out of Chinatown or leave San Francisco it would be necessary for them to submit to inoculation, and quite a number submitted to the inoculation, but always before they had been in communication with the Chinese quarter. During all this time a coterie of white physicians and others were circulating all kinds of rumors among the Chinese as to the direful effects of the inoculation. I was informed by the secretary of the Six Companies that a rumor was circulated to the effect that 5 Chinese had died suddenly from the inoculation. I took occasion to run this rumor down and found that it was absolutely without foundation. Two Chinese had become, however, quite sick on the day following, but two days after were seen about the streets. Another circular, issued by whom I do not know, was to the effect that the health inspectors were dangerous people and were liable

to poison them not only by the injection but also their food and water.

After a week's delay in attempting to give the inoculations, it was abandoned as a failure. During this time 58 Chinese, 530 Japanese, and 234 Caucasians were inoculated. A considerable portion of the time was consumed in promises of the Chinese attorneys and others in authority, who claimed if a little more time be given to the Chinese it would bring about the desired result in allowing a house-to-house inspection to be made. The board of health rested during this time, and was not a little surprised to be notified to appear in court to show cause why it and the Federal quarantine officer should not be enjoined from further inoculating or preventing the Chinese from leaving the district. It was then evident to all that the attorneys were playing for time in which to formulate their complaint and file the papers in the United States court, and it was not the intention to further aid the board of health in carrying out what it deemed necessary for the prevention or suppression of plague among the Chinese residents of San Francisco. These people had been deluded time after time by erroneous statements made in the press of San Francisco. In fact, I am warranted in stating that the truth about the plague situation has never been published.

An unfortunate feature of the suit brought was the fact that in some way the pamphlet on plague issued by the Supervising Surgeon-General fell in the hands of the attorneys of the Chinese. That part, which speaks of the Haffkine prophylactic, and particularly the statement made therein that it should not be given to any one who had been directly exposed to the plague, was used to the greatest advantage possible. Even the judge in rendering his decision laid special stress upon this point to show that this method would be highly dangerous for people who had been exposed to plague, and, therefore, could not be safely taken. I do not know whether Judge Morrow was aware of the fact that when he stated that in administering the Haffkine prophylactic under these conditions it was a tacit admission that plague did exist in the Chinese quarter or otherwise there would have been no danger in its administration.

The administration of Haffkine prophylactic has been on the whole a failure. Whether it accomplished any good or not is a question—that is, so far as the Chinese are concerned. It certainly has immunized 500 Japanese whose condition and mode of life is not far removed from those of the Chinese. In this way it has eliminated this number of being reagents in the dissemination of plague. I have stood in readiness to furnish the local and county boards of health limited quantities of the Haffkine prophylactic on demand. I have in this manner distributed several hundred doses to health officers in the surrounding towns.

J. J. KINYOUN,
Surgeon, U. S. M. H. S.

CORRESPONDENCE.

EYE INJURIES, PRODUCING SIMILAR RESULTS IN BOTH EYES.

To the Editor of the MEDICAL NEWS:

DEAR SIR:—In the London *Lancet* for March 31, 1900, there is a report by Albert Benthall, F.R.C.P., of an extraordinary case of the loss of both eyes, one after the other, from similar accidents. His patient was a man, forty-one years old, who in 1896, while washing his face, scratched his cornea; panophthalmitis resulted and enucleation finally had to be performed. The same man in 1900, while executing similar movements, had a nearly precisely similar accident, but so far enucleation had not been thought necessary.

Although such cases do not add to the scientific side of medicine, they are nevertheless exceptional enough to deserve a passing notice, and I trust I may not go amiss if I add an observation of my own, not unlike the above. This patient, now sixty-three years of age, injured himself when he was thirty by falling against some projection in his path. The result was a cut across the cornea of the left eye, making a jagged, V-shaped scar extending nearly to the center; there was probably some prolapse of the iris, but it does not look as if the wound had become more than superficially infected. Judging from his story the wound healed slowly, but some time afterward cyclitis developed and the sight was lost; to-day the bulb is typically atrophic, with absolutely no sight perception left.

The same man, three months ago, was struck by some projection and injured his *right* eye, as he describes it, in very much the same way as the earlier accident injured the *left* eye. The same V-shaped cut was made, there was about the same amount of pain, and probably the same prolapse of iris. This time he sought professional advice at once. On examination I found a jagged wound of the cornea, some prolapse of iris, empty anterior chamber, and pain. I cut off the prolapsed segment. Suppuration did not take place, nor was there very much cyclitis subsequently, so that the condition now is not so bad as it is in the right eye. The cornea is to some extent transparent, and evident light perception is retained. On comparing the two eyes, the similarity of the resulting scars is very striking; the only appreciable difference is to be found in the transparency of the more-recently injured cornea.

The accident, by itself even, but particularly when presented so coincidently with the report of the case in England, is worth recording, if only for curiosity's sake.

Albert B. Hale.

103 State Street, Chicago, May 18, 1900.

THE PATHOLOGICAL INSTITUTE.

To the Editor of the Medical News:

Dear Sir:—To some of us whose field of activity lies outside the limits of the State of New York, the nature of the controverys raging at present about the aims and purposes of the Pathological Institute must appear fraught with danger to the future evolution of scientific psychiatry on American soil. The criminations and recriminations flung to and fro should never have marred the discussion, as they necessarily obscure the real issue. The personal equation should be entirely eliminated; the principles involved call for consideration, and not the men who are purely incidental. In this light I ask you to consider what I have to say on this vital subject.

When the seventh annual report of the New York State Commission in Lunacy for the year 1894-1895 announced to the world the consummation of their long-cherished hope of establishing "a department for the special study of mental pathology," and characterized this "as the most important step and one which has not hitherto been undertaken by any State or country," I, with many others, awaited and watched the growth of this department with eager interest and expectancy. Every successive report of the Commission contained words of praise and approval of the work done at the Pathological Institute, of its future aims, etc. In the tenth annual report for the year 1897-1898 we read the following words by the President of the Commission: "And yet we maintain, as is asserted by many scientific men, not only in this country but abroad, that New York State is the pioneer in establishing this work upon a permanent basis and upon a system that will attain more beneficial results for the expenditures made than any work of the same nature heretofore instituted."

Profoundly conscious of the shortcomings of psychiatric research as heretofore conducted, positively hungry for something better, I was carried away by my—as I see now too ready—enthusiasm as best shown by the following quotation from my paer, entitled "Our Work and Its Limitations," read at the meeting of the American Medico-Psychological Association of 1899:

"After admitting humbly the utter inadequacy of our present mode of procedure, we must ask ourselves the question how we, whose life-work lies among the insane, are to proceed to add even a single jot to the future science of psychiatry? We could do more than that if we were given the proper facilities with all that these imply. We should be able to satisfy the most exacting demands for original research-work by the establishment at each hospital of fully equipped laboratories, by the employment of the best skill in the different branches of scientific research, and by the transformation of our asylums and hospitals into sanitaria which would attract all incipient neuropathic and psychopathic patients. Is this feasible? Will such favorable conditions ever prevail except within the confines of visionary dream-life? There is no reason why we should give ourselves up to idle speculation when the way out of the difficulty has been clearly shown to us by the State of New York in the creation of its Pathological Institute where, if untrammeled by traditional views, if fostered by a true scientific spirit, psychiatric science promises to grow to what it should be. The immense scope of the work at such an institute is best shown by naming the different branches of science that enter into the sphere of its activity; here we find psychology, psychopathology, experimental physiology and pathology, cellular biology, pathological anatomy, comparative neurology, physiological chemistry, anthropology and bacteriology. The work in some of these branches must necessarily be done at the hospitals; but even there, to be of value, it must be performed, under the direction of a specialist by trained assistants whose methods should be faultless and beyond reproach. No valid objection could possibly be raised to the pursuit of such work by our assistants and ourselves even under conditions prevailing at present, but we should certainly not attach to our labors the intrinsic value possessed by the work of thoroughly trained specialists. In this connection I may quote the following passage from the report of one of the hospitals received some time ago: 'The scientific work in the medical department is kept well abreast with the advance of the day. The pathological laboratory serves a most excellent purpose; it is of great value not only in the matter of diagnosis but in the accumulation of most interesting material.' And these words emanating from an institution that, to my knowledge, has never startled us by particularly progressive work. I firmly believe that such words embodied as they are in a report to superior officers, *i. e.*, boards and legislatures, are bound to create the impression that the work done at that particular hospital promises to greatly advance psychiatric science. As long as we hide under the cloak of self-satisfaction relief will never come to us. Bold, oft-repeated confession of total absence of opportunities for research-work would eventually arouse popular opinion to a sense of realization of our real needs, and, with the growing popular opinion as a *vis a tergo*, the law-making bodies of every commonwealth would rise to the occasion by following the brilliant example set by the State of New York. The demands made on the hospitals for the insane for startling, epoch-making discoveries are manifestly absurd under present conditions. It is but too frequently forgotten that the man at the helm of a hospital for the insane, is, first of all, a practising physician. The fact that the peculiar nature of his patients necessitates their aggregation in large numbers under one roof does not affect the truth of the above proposition in the least. He should be a scientific physician, and by this is meant one who will absorb and digest all intellectual pabulum offered by his science, who will ever keep abreast of the times and who under-

stands how to apply the thus accumulated knowledge for the benefit of his patient. The scientist, on the other hand, is the man who evolves scientific facts and truths, and to him we must look for advanced knowledge and new methods. No river can ever rise above its source."

At the last meeting of the American Medico-Psychological Association, Dr. Wise presented a paper which proved with painful clearness that I was the victim of the grossest misconception when I wrote the above quoted passage—that the Pathological Institute had never been intended by its creators to assume the rôle of a seat of broad-gauged scientific research. Its real purpose was to remain the "hand-maid" of the hospitals, or some sort of a post-graduate school of psychiatry, where the internes of the hospitals were to be taught "more matter and less methods." The ancient obstetrical phenomenon had certainly found another brilliant illustration: *Parturiunt montes, nascetur ridiculus mus!*

As important as the establishment of a central laboratory mainly for teaching purposes may have appeared from a purely local point of view, it would have merited but passing notice by the scientific world, here and abroad, as a praiseworthy move in the direction of administrative economy and nothing more. At the Richmond meeting I frankly admitted my error and requested the Association to expunge from its records my untimely eulogy on the State of New York and its Pathological Institute. This was done with a heavy heart for I have learned to look upon New York State as the pioneer in all matters pertaining to the welfare of the insane as well as scientific progress. Is it too late to hope that some way out of the difficulty may be found, which will save the Institute from obliteration and preserve its character as an independent center of scientific research? We, of the rest of the country, can ill afford to see New York State step from its wonted high plane, for, in our struggles for better things, we have grown accustomed to sound its praise and to point to it as the shining example to be ever emulated by our commonwealths.

I have had but scant opportunities for personal scrutiny of the work done thus far by the Institute. I am waiting for results; to expect them now, after the short life-time of the Institute, would be manifestly absurd. At the expiration of ten years we should be justified in expecting conclusive evidence of the merits or demerits of its work. I am very much averse to criticise offhand any new departure from our present methods of psychiatric investigation, which, in my humble opinion, will never disclose to us the true nature of psychic disease, its true etiology and lead us to non-empiric treatment. In saying this I am aware of the fact that I am in strict opposition to the best, by me most admired, American psychiatrists. On this point I placed myself on record in my above-quoted paper in the following manner: "Even though there is cumulative evidence that some sort of causative relation exists between psychic disease and such agencies as puerperium, trauma capitis, insolation, infectious diseases, particularly lues, alcoholism and other drug-poisonings, we are still in utter darkness about the real *processus* and *causa morbi*. This deplorable inability to fathom the true nature of psychic disease makes itself keenly felt in our classifications of insanity. The grouping of insanities as psychoneuroses, psychic degenerations, organic psychoses and developmental psycho-asthenias is of undoubted practical significance, especially as their proper and timely recognition has great weight in the prognosis of each individual case. But the absence of all exact interpretation of the pathologic process renders the scientific value of such classification highly questionable to say the least. Take as an illustration a genuine functional psychosis and one that so often appears in the course of dementia paralytica; clinically the differential points are readily enough established, but can this be said of the morbid process which engenders these clinical manifestations? The earlier we recognize the fact that clinical methods of investigation will never lead to the solution of the essential nature of psychic disease, the sooner will psychiatry reach the dignity of a true science. I profess that I have no reverence for the old simply because it is old and hoary, for the traditional because it has thus far been accepted as the *alpha* and *omega* of our knowledge. Why should we shrink from the destruction of time-honored scientific idols when it will be followed by the erection of a structure grounded solidly on exact methods of modern science?"

I do not deny that some good results may be accomplished by refining our clinical methods to the very utmost; that this is possible has been clearly proven by the recent advances made in clinical psychiatry. As an example I shall mention Kraepelin's work which is characterized by a happy combination of painstaking observation and proper correlation of clinical symptoms. Kraepelin has undoubtedly succeeded in proving the existence of close relationship between some so-called forms of psychic disease where we were accustomed to look for differential points; his work has tended toward simplification of matters psychiatric and toward assisting us still further in arriving at a scientific prognosis. Such results are highly gratifying, and the work along those lines should be continued at all the hospitals for the insane that are possessed of ample financial and intellectual means, with the emphasis on the latter as most of us command just sufficient medical aid to attend properly to our patients and have but little to spare for our "cases," and I will add that I still consider *our* chief and most sacred duty to care for our patients, our prating critics notwithstanding. It is my firm belief that the true nature of psychic disease will not be known to us until the searchlight of modern science has penetrated the most secret recesses of psychology

and psychopathology, which can only be accomplished in a specially-equipped psychopathic hospital attached to an institute of such character and scope as I thought the New York Pathological Institute was to possess. Should the efforts of the scientist in that direction prove barren of results, then, I fear, we shall find ourselves facing the humiliating dictum: "*Semper ignorabimus.*"

Edward C. Runge, M.D.

Superintendent St. Louis Insane Asylum.

St. Louis, Mo., July 5, 1900.

A PROTEST FROM WOODS HOLL.

We, the undersigned, members of the faculty of the Marine Biological Laboratory, at Woods Holl, Mass., feeling that the citizens of the State of New York, and liberal-minded men everywhere, are to be congratulated upon the establishment of the Pathological Institute of the New York State Hospitals, an institution founded for the investigation of the problems connected with insanity and related diseases and unique in the annals of medicine for the greatness of its opportunities, most strongly recommend that the work of investigation for which the institute was founded be not hampered or limited by any change in its present form of organization, and that it be sustained along its present lines of organization and principles and research.

(Signed)
C. O. WHITMAN,
Director—Head Professor of Zoology, Univ. of Chicago.
FRANK R. LILLIE,
Assistant Director—Assistant Professor of Zoology, Univ. of Chicago.
FRANKES LOEB,
Professor of Physiology, Univ. of Chicago.
ALBERT MATHEWS,
Instructor in Physiology, Harvard Univ.
HENRY E. CRAMPTON,
Lecturer in Zoology, Columbia University.
GAYLORD F. CLARK,
Professor of Physiology, Syracuse Univ.
WALTER E. GARRY,
Fellow in Physiology, Univ. of Chicago.
DAVID J. LINGLE,
Instructor in Physiology, Univ. of Chicago.
AARON L. TREADWELL,
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S. J. HOLMES,
Instructor in Zoology, University of Michigan.
C. M. CLAPP,
Professor of Zoology, Mt. Holyoke College.
A. D. MORRILL,
Professor of Biology, Hamilton College, N. Y.
BRADLEY M. DAVIS,
Instructor in Botany, Univ. of Chicago.
THOMAS H. MONTGOMERY, JR.,
Instructor in Biology, Univ. of Penn.
WINTERTON C. CURTIS,
Fellow in Johns Hopkins University.
CHARLES W. GREENE,
Professor of Physiology, State Univ. of Mo.
W. M. WHEELER,
Professor of Zoology, Univ. of Texas.
H. V. NEAL,
Professor of Biology, Knox College, Ill.
WILLIAM PATTEN,
Professor of Biology, Dartmouth College.
MAURICE A. BIGELOW,
Instructor in Biology, Teachers' College, N. Y.
EDUARD L. THORNDIKE,
Instructor in Psychology, Columbia Univ.
ROBERT M. YERKES,
Assistant in Psychology, Harvard Univ.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, July 5, 1900.

THE OPEN-AIR TREATMENT OF CONSUMPTION—PROGRESS OF THE MOVEMENT—HOSPITAL WINDOWS KEPT OPEN IN ALL WEATHER—NOTIFICATION OF CONSUMPTION AND DISINFECTION OF HOUSES ADOPTED IN MANCHESTER—THE PERILS OF CERTIFICATES OF INSANITY—CHARGES AGAINST HOSPITAL AUTHORITIES BY THE METROPOLITAN RADICAL FEDERATION—THE YELLOW-FEVER EXPEDITION OF THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE—VISIT TO WASHINGTON AND TO JOHNS HOPKINS UNIVERSITY—BANQUET TO SIR WILLIAM GAIRDNER.

As I stated in a previous letter the open-air treatment of consumption is receiving considerable public attention. Another sanatorium has been opened at Stanhope for the county of Durham. All the windows have been made to open outward and are never closed by day or by night. The National Association for the Prevention of Consumption has come to the conclusion that, although consumption is rare in school children, the bad ventilation which exists in most schools produces the very conditions that predispose to the disease. The Association therefore has sent a memorandum to school teachers pointing out the importance of school ventilation. It is also thought that teachers should pass an examination in school hygiene. The committee of the North London Chest Hospital has issued a statement in which great success is claimed for the open-air treatment inaugurated last year. In wards containing twenty-four beds the windows have been kept open in all weathers, the patients being kept warm by additional blankets and the direct application of artificial heat. When it became clear that this method, combined with rest, feeding, and graduated exercise was arresting the disease, the same treatment was adopted throughout the building except in the bronchitis and asthma wards. The records show as the result of twelve months' experience that most of the patients admitted in the early stage have recovered; 76 per cent. are considered to have been permanently benefited. The registrar says: "It is common for patients to come in with an evening temperature of 100° to 102° F. and with extensive signs of mischief, and to go out with no sign of active disease, a normal temperature and an increase of a stone in weight. Nearly all return to work, some to their ordinary occupation, but whenever

possible to work in the open air. A large number of the old patients have been traced and none who has markedly improved and has endeavored to follow out the teaching given, has shown signs of relapse. If consumption is not stamped out in Manchester it will not be from want of energy of the authorities. Cases are notified to the public health department and officials are sent to the patients' houses to disinfect and cleanse them. During the last three months 145 houses from which patients have been removed to hospital have been stripped and washed with chlorinated lime. In the other cases, where the patient remains at home, the sanitary inspector makes a fortnightly visit to see that the house is kept clean and free from dust.

Two cases have just been decided in the courts which show the very unsatisfactory condition of English law on the question of certificates of insanity and the grave peril to which medical men are exposed in the discharge of their duties. In one a coachman became mentally depressed because of his wife's pregnancy. He threatened to murder her and said that he heard voices which prevented him from sleeping. A doctor was called in and ordered his removal to the lunacy ward of the workhouse from which he was discharged in three days. He brought an action for damages against the medical man, alleging that his detention was due to professional negligence. Medical evidence was given showing that the plaintiff suffered from homicidal mania and that rapid recovery was possible in such cases. A verdict was returned for the defendant with costs. As the plaintiff is in humble circumstances it is extremely improbable that the doctor will be able to recover any of the expenses he has had to incur simply because he did his duty. In the second case the plaintiff was an eccentric lady, aged forty years, who had passed an examination as dispenser. She believed she heard voices and accused the assistant matron of a religious institution in which she stopped of trying to take her soul from her by diabolical practice, of reading her thoughts, and of throwing her down in the streets. All these matters she accounted for as "thought body" phenomena. One day she visited her pharmaceutical tutor to ask him to get her an appointment as dispenser. Here the doctor who was defendant in this case saw her. She waved her arms about, talked to herself and tried to strike her host. Knowing all the facts the medical man wrote a letter to the relieving officer, stating that the woman was of unsound mind and that as she was seeking a situation as dispenser she was a danger to the community. However, the authorities refused to take any action in the matter. A suit was brought and $400 and costs were recovered from the doctor.

Inspired by antivivisection literature the Metropolitan Radical Federation has addressed an extraordinary memorial to the Committee of the Prince of Wales' Hospital Fund setting forth two matters of complaint, "one of the gravest scandals of our time." The first is that there is too much tendency on the part of doctors and students to regard hospital patients as so much material for experiment. "It seems to be an axiomatic truth that if experiments must be made on a living subject, the proper subject must be the patient himself." The second complaint is that grants from the general receipts of hospitals are devoted to medical schools. In regard to the first charge the Committee, after careful and expert inspection of the hospitals, reports that it is unfounded, and points out that it is simply a loose and scandalous charge without any particulars which can be dealt with by evidence in detail. As to the second charge the Committee reports that no grant is made from the fund toward medical schools.

The arrangements made by the enterprising little Liverpool School of Tropical Medicine for the dispatch of a yellow-fever expedition to the United States and Brazil have been completed. Lord Salisbury has requested the British Ambassador at Washington and the Consul at Para to obtain all possible facilities from the United States and Brazilian authorities. Official invitations for the expedition to visit Washington have been received from the heads of the medical department of the United States Army, and to visit Baltimore from the Johns Hopkins University. The expedition will sail on June 25th for Canada and proceed direct to Washington and Baltimore. After conferring with the bacteriological experts there it will go to New York and thence sail to Para. Advantage will be taken of the opportunity to test still further the work of the School on malarial fever carried on by Major Ross, and also to study dysentery and other tropical diseases. The Committee of the Liverpool School has arranged for a public meeting which it is hoped will be attended by merchants and others interested in tropical countries. The principal object of the meeting will be to urge upon the Government the necessity for doing everything possible to ameliorate the conditions of life in British tropical colonies—by improved sanitation, better water-supply, light railways, segregation of the European population, and other means.

The banquet given to Sir William Gairdner on his retirement from the Chair of Medicine in Glasgow University was worthy of the occasion and showed that the esteem of his fellow citizens for his high character and scientific attainments is as warm and as enthusiastic as that entertained for him in the medical world. Some friendly banter was exchanged by representatives of the learned professions as to their relative value to humanity. Sir William refrained from trying to settle the difficulty, but he mentioned that he had just received the second Chinese edition of Whitla's "Dictionary of Treatment." Did the Sheriff (who was present) ever know of a legal book being translated into Chinese and reaching a second edition?

OUR PARIS LETTER.

[From Our Special Correspondent.]

Paris, July 4, 1900.

DEATH OF DR. CHÉRON—THE NEW PASTEUR HOSPITAL—NEW METHODS OF ISOLATION—TREATMENT OF BASEDOW'S DISEASE—DR. LETULLE'S EXPERIENCE WITH CACODYLATE OF SODA.

Dr. Chéron, a man well known in Paris for his extensive work and his researches on the use of artificial serum, has just died. He began by studying natural history. Afterward he obtained the post of physician at the St. Lazare Hospital for prostitutes and entered upon the study of gynecology. He was the director of the *Revue Medico-Chirurgicale des Maladies des Femmes*, a journal which he directed for several years and in which he advocated conservative treatment at a time when surgical intervention was too much in fashion. Dr. Chéron was also well known for his works on hypodermic injections, he having established a formula for concentrated serum, which in small doses was used extensively as a stimulant. The composition of this serum was as follows: Pure carbolic acid, 1 gram; Chloride of sodium, 2 grams; Phosphate of sodium, 4 grams; Sulphate of sodium, 8 grams; Boiled distilled water, 1000 grams. Dr. Chéron was in the habit of injecting from 5 to 120 grams at one séance, and he usually chose the retrotrochanteric region. It should be done very slowly and slight massage employed afterward. Its use is indicated in cases of neurasthenia, severe anemia, senility and during convalescence after prolonged forms of fever.

The Pasteur Hospital which has been in course of erection during the last few years was definitely opened on July 1st. This hospital is built according to the latest and most approved ideas in reference to isolation and disinfection. The fund for its construction was given anonymously.

At a recent meeting of the Berlin Medical Society the subject for discussion was the medical treatment of exophthalmic goiter as opposed to surgical intervention. Dr. Klemperer said he did not believe Basedow's disease was one to be treated surgically and he thought the cases one was apt to see in practice are of a milder nature than those observed in hospitals, and, therefore, an operation would be hardly justifiable. In five years Klemperer has seen 80 cases of exophthalmic goiter and he has found that the best treatment is rest, abundance of food, faradization of the great sympathetic, and hydrotherapy. In one case he ordered thyroidine and 200 capsules were taken by the patient. In only one case did he call in the surgeon and the following symptoms were noticed after the operation: The pulse went down, and the trembling diminished, but the exophthalmia and the abnormal psychical condition lasted a year and a half. These last symptoms are diminishing, however, at present. Dr. Ewald said that after all the principal cause of a cure was not so much the use of drugs as the natural result of time. As for thyroid extracts, he has used them and has obtained bad results. A change of climate is sometimes beneficial. Ovarian and thymic extracts have given good results in one case each, but in another case the latter preparation had no effect.

Senator insisted on the importance of psychic causes in the etiology of this affection and the use of the galvanic current. Arsenic as the French have shown, tends to prevent the bad effects of the thyroid extract and is efficacious.

Mariani has exposed in *La Clinica Chirurgica* the results of 9 operations consisting of excision of the great sympathetic in the cervical region. One of these operations was carried out in a case of exophthalmic goiter. The post-operative results were most remarkable. Immediately after the excision of the cervical sympathetic, the eyes became less prominent, the pulse slowed down, and the cardiac disturbances disappeared. The goiter was less turgid and the patient slept better. It is to be supposed that the morbid conditions were due to compression of the great sympathetic by enlarged lymphatic glands. As to 8 other cases of epilepsy, the results obtained varied somewhat, and were not conclusive.

At the Boucicaut Hospital yesterday, I saw Professor Letulle, who is, with Dr. Cornil, the great pathologist of France, and we spoke of the new treatment by cacodylate of soda. Dr. Letulle has had very good results from it in some cases of chronic bronchitis and emphysema, in which the patients increased as much as twenty pounds in weight. Still, after having said this Dr. Letulle seemed to remain rather skeptical, and he added that such results could be obtained by other means, and that as soon as the patients were no longer under the influence of the regimen followed at the sanitarium he has established at the Boucicaut Hospital, they had a tendency to relapse into their former condition.

SOCIETY PROCEEDINGS.

ILLINOIS STATE MEDICAL SOCIETY.

Annual Meeting, Held at Springfield, May 15, 16 and 17, 1900.

Tumors of the Spinal Cord and Its Membranes.—This paper was read by Dr. Frank P. Norbury, of Jacksonville. Disturbed functions of the cord vary in intensity and kind, involving either or both the cord and its membranes. But as symptoms of organic disease, and especially tumors affecting the cord or its membranes, are similar it is necessary to study the symptoms in common. Practical diagnosis recognizes the logical sequence of symptoms and does not accept as disease what in many instances are purely symptoms. Differential diagnosis considers pathogenesis of tumors when possible. Defective function is seemingly not commensurate with existing

lesions; in some cases the reverse is true. Symptoms should be systematically considered. The plan of Eskridge is a good one, namely, (1) irritation of the nerve-roots; (2) meningeal symptoms; (3) cord symptoms. Irritation of the nerve-roots begins by changes in sensibility, such as pain, neuralgic in character. Neuralgia is apt to be the diagnosis. Sensory symptoms, usually unilateral at the beginning, become more pronounced as the neoplasm develops. Segmental diagnosis is of assistance here as soon as local symptoms appear. Motor symptoms usually give the clue as to localization. Numbness, hyperesthesia, and later anesthesia, follow along the distribution of the nerves involved. Contracture, spasm, and exaggerated reflexes of the extremities are noted. There are no pronounced differentiating meningeal symptoms, except Kernig's sign and muscular rigidity when the upper cervical region is involved. Cord symptoms are those of gradual compression, namely, motor and sensory paralysis, spastic symptoms, vasomotor, trophic and reflex changes. Differential diagnosis as to intradural, intramedullary location requires careful investigation. Vasomotor and trophic symptoms are sweating, unilateral and profuse, occasional deep capillary flushings, herpetic skin-eruptions, bed-sores, change in the skin and nails.

Differential Diagnosis.—In caries the great point is history or the presence of tuberculous infection elsewhere, to be suspected in young persons, and especially when there is a clinical history suspicious of tuberculosis. The pain, tenderness, deformity, muscular rigidity, are points in differentiation.

In carcinoma there will be a history of removal of malignant growth; constant bilateral sciatica. A case was narrated with this symptom present, and lumbar carcinoma was found after death; also some deformity, etc. Cervico-occipital neuralgia, myelitis, syringomyelia, spinal syphilitic tumor, were also considered in differentiation. The observations as made and upon which the paper was based were derived from a study of three cases, one of tuberculous tumor, intramedullary cervical region; one of sarcomatous, dorsal region, extradural, and one of carcinoma, extradural, lumbar region. The post-mortem findings confirmed the diagnosis in two cases.

Is Pneumonia Contagious?—Dr. J. T. McAnaly of Carbondale read this paper. The following conclusions and inferences were drawn: (1) Pneumonia is an acute specific and mildly contagious disease, produced by the micrococcus lanceolatus, involving the vesicular structure of the lungs in an exudate of greater or less extent, and is attended by severe and often dangerous constitutional symptoms due to toxins produced by the infecting micro-organism. (2) The isolation of cases should always be recommended. No two cases should occupy the same room at the same time. The aged and children, owing to the large mortality among this class of cases, and to the enfeebled powers of resistance of the former, should be excluded from the sick-room. (3) The room should be large and should be kept well ventilated. Pure air is most essential for the pneumonia patient. The danger of vitiated air should be constantly kept in mind. It is a point to be doubly guarded because of its harmful effects upon the patient and its dangers to the attendants. (4) The prompt and thorough disposal of all pneumonic sputa is important. It may be harmless to-day, but dangerous to-morrow. Prophylaxis is clearly one of the most important points to be considered. Since the true nature of pneumonia has been demonstrated by the bacteriologist, we may the more readily appreciate its dangers and guard against the septic possibilities resulting from pneumonic invasions. (5) The rapid increase of our knowledge of bacteriology, and the introduction of specific remedies afford ground for the hope that soon there may be discovered a treatment for pneumonia as certain and effective as that of antitoxin for diphtheria, or quinine for malaria.

California as a Health Resort.—Dr. John H. Hollister of Chicago read a paper with this title. Three questions formed the basis of the paper: (1) Persons to be benefited. (2) The locations suited to their various needs. (3) The proper care of such individuals. These questions were considered in their order. No climate in and of itself is curative. The power for recovery must be inherent with the patient. Environments at best are only helpful. Given certain recuperative powers in the individual, the conditions which may best promote recovery are (*a*) a dry soil, with freedom from soil exhalations; (*b*) a mild atmosphere, pure in quality and nearly uniform in temperature; (*c*) exposure, with personal comfort, of continuous days of sunshine; (*d*) wisely-directed daily exercise; (*e*) a residence isolated from crowded apartments, with good ventilation, proper drainage, and plenty of sunlight exposure; (*f*) a liberal bill of fare, well selected and properly cooked; (*g*) pleasant social relations and diverting pastimes. These are the ideal factors which promise most of helpfulness, so that in no single locality can one expect to unite them all. Still he thinks we may more nearly approximate such conditions in California than in any other location with which he is familiar elsewhere.

The Pathology of Parturition.—Dr. J. Clarence Webster of Chicago delivered an address on this subject. Under the head of anomalies of the hard passage he included all variations from the normal type of bony pelvis. The complications in labor associated with these conditions are among the most important in the whole field of obstetrics. In Europe much more attention is given to their consideration than in America, because it is generally believed that pelvic deformities are much more common there than here. In the light of recent work it is doubtful if this widely-held view is correct. In both continents it is very difficult to get accurate data regarding the frequency of their occurrence. In this con-

nection the author referred to the recent work of Williams and Dobbin of Johns Hopkins, saying that it is worthy of the most careful study. The observations of these gentlemen are a direct challenge to those who hold the common belief regarding the infrequency of pelvic deformity in America. Their statistics were quoted by Dr. Webster.

Contracted Pelves.—The most frequent contractions met with in practice are the folowing: (1) The justominor or universally contracted pelvis. (2) The flat non-rickety and rickety. (3) The funnel-shaped pelvis. (4) The pelvis altered by various spinal deformities. Of these, perhaps, the most common are the universally contracted and the flat.

The Use of Forceps.—Successful delivery of a head lying above the brim of a flat pelvis with a true conjugate of 2.75 inches must, indeed, be considered impossible with the ordinary long forceps unless the head be abnormally small. It is in such difficult obstetrical case that the overwhelming advantage of the axis-traction instrument is best demonstrated. Such a form as that devised by Milne Murray gives a maximum of advantage in traction and a minimum of waste of power and of danger to maternal and fetal tissues. The Walcher position was very favorably commented upon by the essayist.

Indications for the Use of Axis-Traction Forceps.—It would be unsatisfactory to mention in detail the many conditions in which the instrument should be employed. In general they were refered to as follows: In delayed labors due to: (1) Faults in the powers, (*a*) essential—the uterus; (*b*) accessory muscles. (2) Faults in the passenger, (*a*) slight enlargement or marked ossification of the fetal head; (*b*) certain malpositions and malpresentations. (3) Faults in the passages, (*a*) soft parts, (*b*) hard canal.

In dangerous labors due to: (1) Maternal complications, *e.g.*, heart-disease, pneumonia, etc.; (2) fetal complications, *e.g.*, some cases of prolapsus funis, dry labors, etc.

Indications for Performing Version.—The chief indications for performing this method of delivery were given as follows: (1) Maternal, (*a*) accidental hemorrhage and placenta previa; (*b*) eclampsia and other conditions where a hurried delivery is considered necessary; (*c*) flat pelvis. (2) Fetal, (*a*) transverse presentations, when the conditions are favorable; (*b*) prolapse of the cord in the first stage; (*c*) brow and face cases when the head has not engaged, if it is impossible to change them into vertex cases.

Indications for Symphysiotomy.—This operation is best regarded as an adjuvant to delivery by the axis-traction forceps. It may be employed where forceps delivery in the Walcher position is impossible, and where there is no doubt that the increased pelvic measurements resulting from the operation will allow the head to be extracted. It may be tried (1) in cases of pelvic contraction. Most authorities mention a limit of 2.6 to 3.2 inches in flat pelves, and 3.2 to 3.9 inches in justominor pelves. It is evident, however, that the employment of the axis-traction forceps in the Walcher position must make unnecessary, in a considerable proportion of cases, the cutting operation. (2) Symphysiotomy also has a place in impacted brow and face cases where delivery cannot be safely carried out with axis-traction forceps and the Walcher position. (3) In cases where the head is abnormally ossified or a little enlarged and delivery cannot be effected by the axis-traction forceps and the Walcher posture, symphysiotomy is indicated.

Indications for Cæsarean Section.—This operation is to be employed mainly in cases of pelvic deformity where delivery of a living child by the methods already considered is impossible. It has also been held by many that it should only be carried out where the child could not be extracted by means of an embryotomy.

Porro-Cæsarean Section.—This should be employed (1) where the patient is particularly anxious not to run the risk of a second pregnancy, owing to the impossibility of delivery through the vagina; (2) where the uterus or appendages are so diseased as to render probable the necessity for a subsequent operation; (3) where owing to a prolonged labor, in which other manipulations have been tried, infection of the uterus has occurred.

Indications for Embryotomy.—At the present time the tendency is to limit the destruction of the fetus to those cases in which it is dead and cannot be delivered by forceps, turning or symphysiotomy; in the case of the living child, to those in which some marked fetal abnormality exists, as a large hydrocephalic head, tumors, monstrosity, etc. In view of the modern improvement in the technic of abdominal surgery, whereby the mortality of Cæsarean section has been greatly reduced, a physician takes upon himself a grave responsibility in recommending the destruction of the living child.

Treatment for the Opium Habit.—Dr. Archibald Church of Chicago read a paper on this subject. In the *British Medical Journal* of July 10th, 1897, Dr. N. Macleod of Shanghai reported seven cases which he had treated by what he called the "bromide sleep." Briefly, the purpose of the bromide treatment is to stupefy the patient utterly for a number of days, during which time the opium is rapidly withdrawn and recovery had from the physical disturbance secondary to its withdrawal. The plan of treatment was hit upon by accident. Macleod states that early in 1897 a neurasthenic woman, addicted to morphine for nine years, by accident had administered to her two and a half ounces of sodium bromide in something over two days. A profound sleep was introduced, lasting several days, and when its effect wore off the craving for morphine had ceased, and with it the various disturbances which had led to its use. A few months afterwards a pilot, who was addicted to morphine and alcohol, agreed to try the effect of the treatment, and no suffering was experienced during the

withdrawal of the morphine, craving for which, as well as for alcoholics, disappeared on recovery from the bromide sleep. Dr. Church submitted the histories of two cases treated by the Macleod method. In the first case the result was excellent. The second case, which might otherwise have been a successful result, so far as the bromide treatment was concerned, terminated fatally, perhaps by the bromide aggravating a nephritis. The method of administration which has been gradually developed as the result of the experience of Macleod and the observation of the essayist, was formulated thus: The drug should only be given in the daytime; 120 grains of sodium bromide in a half tumbler of water, every two hours, until an ounce is given in the same day, and this may be sufficient, or it may be necessary to continue the doses in the same way on the third day. Macleod says a safe rule is to cease the administration of the bromide after twenty-four hours, when drowsiness is so profound that the patient cannot be aroused, or, when aroused, is incoherent. If the sleep continues or becomes deeper, no more bromide will be needed. It is to be remembered that the bromide acts in a cumulative manner. After the second or third day, when the bromide is withdrawn, the drowsiness, in some cases actual coma, tends distinctly to deepen for forty-eight hours, so that the fully-developed sleep presents a rather alarming condition to any one not familiar with it. For two or three days there is difficulty in feeding the patient, and swallowing is sometimes impossible, so that rectal alimentation is required. During this treatment there is apparently a tendency to aspiration pneumonia, so that feeding by the mouth becomes doubly dangerous. Any septic condition in the pharynx or in the antra communicating with the mouth should contraindicate the treatment. The poisonous effect of the bromide falls apparently upon the respiratory and cardiac centers, so that a weak heart or impaired pulmonary conditions would furnish reasons against the method. From the case of nephritis that terminated fatally, it is strongly suggested that bromide of sodium in large quantities acts harmfully upon the kidneys, if diseased, and therefore any degree of nephritis should be a contraindication to this line of treatment. Three deaths occurring in twelve cases, although in each instance ascribable only remotely to the bromide, and occurring where the bromide had been used in extraordinary doses—doses that can no longer be advised—show that the plan of treatment is very far from being simple and without danger. However, as compared with the difficulties of the ordinary methods that are pursued in correcting addiction to morphine, it seems to the author to be of very definite value in well-selected cases, and in such cases he would not hesitate, under appropriate safeguards, to employ it.

Yellow Fever in Cuba.—No new cases have appeared at Quemados for ten days.

REVIEWS.

The Criminal. His Personnel and Environment. A Scientific Study. By AUGUST DRAHMS, Resident Chaplain State Prison, San Quentin Prison, San Quentin, Cal. With an Introduction by CESARE LOMBROSO. New York, The Macmillan Company.

Clinical Studies in Vice and Insanity. By GEORGE R. WILSON, M.D., Medical Superintendent, Mavisbank Asylum. New York, The Macmillan Company.

THESE two books represent the point of view in an excellent manner. From the vantage ground of method they appeal to widely-diverse tastes. In theory they would attain much the same end although there are minor variations in the subject matter. The work on the Criminal is essential philosophical; that by Dr. Wilson is presented from a distinctly clinical standpoint. The first is full of carefully-presented ideas; the second deals with masses of incoherent facts.

Drähms assumes as a central thesis that crime is largely a social disease. "As such, it is clearly not an accident, nor a misfortune, nor yet an incident that clings to the skirts of advancing civilization, but is the result of distinct causes, whose genesis and amelioration through preventive methods and the application of proper remedial agencies, it is becoming more the fashion of contemporary thought to explore." He, thus, is largely Spencerian in his tendencies and his philosophy in the mode of handling the problems involved is molded widely on that thinker's outlines. The criminal as a part of society, made so largely by its own structure, is certainly a fascinating theme, and we have read the author's work with much interest and profit. The more interest, perhaps, because, emanating from a theological source, we had prejudged a series of dissertations on moral laws and moral judgments coming from Above. The effect, then, of finding a distinctly logical and shrewd handling sensibly heightened the enjoyment of reading. We find the book fully the equal of that of Havelock Ellis and one of the best we have met, not barring the classics of Italy, France and Germany. The chapters are as follows: The Philosophy of Crime, Criminal Identification, Criminal Classification, The Instinctive Criminal, his psychology, origin and heredity, The Habitual Criminal, The Single Offender; Chapter X. deals with the Demography of Crime and, finally, there are considered The Juvenile Offender, Hypnotism and Crime, Punishment, Reformation and Prevention.

The one fault that the book has, if it be considered a fault, is its leaning towards the dry statistics of that peculiar Italian product, measurement anthropology. The author fully realizes the dangers of the school, but almost in the same breath that warns he speaks forth the conclusions derived from such mensural methods. Such methods are extremely interesting and suggestive, but, like the doctrine of probabilities, they

analyze truly what has taken place, but are of minor service in the estimation of what is definitely to happen.

The work deserves a wide reading, especially by that large class of would-be-reformers that are ever with us, anxious to change the broad general lines of the psychology of the human species by some small legislative detail that appeals to their own parsimonious intellect.

The second work, we believe, needs an excuse for being. So many of its kind exist that there should be good reason why the long-suffering reader should be made to go through so many pages and get so little matter. We confess that we are not much interested in Mr. Seventh or Miss Tenth or Mrs. Fifteenth. We read often of debased characters, bad morals and other Mrs. Grundy appellations without much adequate idea of just what bearing they may have on the analysis of the questions at issue. As a guide-book to a number of specimens it has its advantages, but as a study, in its psychological sense, of the causes of alcoholism, of vice and of insanity, it requires much in order to be of value. For the young who are still collecting data and would know how it should be collected, the volume will be of service and for its straighforward descriptions and homely comparisons it will be interesting.

Lea's Series of Pocket Text-Books. Chemistry and Physics. A Manual for Students and Practitioners. By Walton Martin, Ph.B., M.D., Assistant Demonstrator of Anatomy, College of Physicians and Surgeons, Columbia University, New York; Member of Association of American Anatomists, and William H. Rockwell, Jr., M.D., Assistant Demonstrator of Anatomy, College of Physicians and Surgeons, Columbia University, New York; Member of American Association of Anatomists. Illustrated with one hundred and thirty-seven engravings. Lea Brothers & Co., Philadelphia and New York.

In attempting to condense into a single volume an adequate amount of information on two subjects which even though closely allied are still so broad and comprehensive as chemistry and physics, the authors have certainly shown a most commendable degree of courage and, considering the difficulty of the task before them, one is tempted to be lenient in advance in judging the results of their labors. Even a cursory examination of the book, however, is sufficient to demonstrate that it is of a nature to stand criticism by most rigorous standards and still not be found wanting, for the authors have been fortunate enough to attain conciseness without thereby reducing their work to the syncopated brevity of a quiz-compend, and with admirable judgment the important facts both from a practical and theoretical point of view, have been selected and succinctly presented to the student, while the mass of unimportant and often antiquated detail, classic through its having been handed from text-book to text-book through the decades, has been allowed to fall away as dead matter.

The text is evenly divided between the two topics, 182 pages being devoted to chemistry and 173 to physics. A clear introduction to the principles of organic chemistry and the subject of graphic formulæ takes up 30 pages, a rather small allotment for so intricate a branch of the science, but complete and useful as far as it goes. The abundance of chemical formulæ that are given in full is likely to be of especial value to the beginner, while the complete lists of compounds and their synonyms under each metal should make it a useful book for ready reference.

In the section devoted to physics the same plan is followed of discussing only the more significant topics and these as concisely as is compatible with lucidity, the illustrations, although most of them are old friends to readers in the science, are copious and well selected. Altogether the little volume deserves only praise and is well worth a place in the carefully edited series of which it forms a part, and with the other members of which it is uniform in binding and price.

THERAPEUTIC HINTS.

Tuberculous Peritonitis in Children.—A careful diet should be maintained, raw meat being a desirable item, also milk, unless diarrhea is present. Iron and quinine should be administered, and, possibly, laparotomy be performed, removing the ascitic fluid. For diarrhea the following formula is helpful:

℞ Quininæ tannat.....gr. viii—xvi
Pulv. ipec. et opii.....gr. v—viii
Sacchari alb.....ʒ iss.
M. Ft. chart. No. X. Sig. One powder three times a day.

Or tannigen may be prescribed, one-half grain every two or three hours.

Mouth-wash and Gargle in Secondary Syphilis.—If the mouth is very sore, only the blandest type of a wash can be tolerated, such as thin flaxseed tea or gum acacia water. If more pronounced medication is possible, one of the following formulæ will be found useful:

1. ℞ Potassii chlorat.....ʒi
Mellis desp.....ʒss
Tinct. myrrhæ.....ʒss
Aq. dest.....ʒi.
M. Sig. A teaspoonful in a glass of water as gargle and mouth-wash.

2. ℞ Potassii chlorat.....ʒi
Aq. menth. piper.....ʒvi.
M. Sig. Dilute slightly as gargle, etc.

3. ℞ Ac. carbolici.....ʒi
Tinct. iodi.....ʒss
Glycerini.....ʒss
Spts. vini rect.....ʒii
Aq. dest.....ʒi.
M. Sig. External use. Fifteen to twenty drops in a glass of water as gargle, etc.—*v. Schrötter.*

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ORIGINAL ARTICLES.

APPENDICITIS AND TYPHOID FEVER.

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My object in writing this very brief paper is to present a clinical condition which I have met with sufficient frequency to make me consider it by no means rare, and which has never failed to puzzle me. I refer to two groups of cases, *viz.*: (1) Cases in which symptoms, developing in the neighborhood of the appendix, indicate the rapid development of appendicitis, yet in which these symptoms gradually subside and the patient gradually passes into an attack of typhoid fever, and (2) cases already well advanced in the progress of typhoid fever which develop appendicular symptoms.

The first group of cases is well represented by the following histories: A young man, twenty-one years of age, came under my care with a history that he had not been feeling well for several weeks, during which time he had some headache. He stated when first seen by the resident physician that he had pain in the left hypochondrium, but when I examined him the pain was chiefly in the right hypochondrium and in the epigastrium, although the entire belly seemed unduly sensitive. Pressure upon the area of the appendix increased the pains already referred to, which in my experience is usually the case in appendicitis, and discovered excessive pain in the appendicular region. The temperature was slightly febrile, the pulse quick and the belly scaphoid. A rectal examination did not evince any pain in the neighborhood of the appendix, seemingly because the finger of the physician could not reach high enough. The next day the pain was markedly accentuated and more limited to the neighborhood of McBurney's point, and the belly was distinctly hard and board-like. I therefore asked Dr. Keen to see him and he agreed that the symptoms were indicative, but, as it was not convenient to operate at once, suggested that we wait till the afternoon. A few hours later the symptoms seemed so typically those of appendicitis that, as Dr. Keen was away, I asked Dr. Hearn to examine him. Dr. Hearn, in whose diagnosis we all have great confidence, at once stated that the symptoms were typical and agreed to operate, but just before the operation, we both remarked that the patient's tongue looked somewhat typhoidal and so postponed the operation once more, deciding that in the meantime the treatment already instituted, namely, the administration of a mild saline and the use of an ice-bag over the appendix, be continued for another night.

I confess that this proposition did not seem to me a very wise one, for, although I recognized the strong possibility that the case was one of early typhoid fever, this fact in no way appeared to me to modify the necessity for an operation for appendicitis, because it was perfectly possible that by coincidence, appendicitis was complicating the onset of typhoid fever. And again, it was possible that there might be typhoid infection of the appendix, producing appendicitis. Or, in other words, that the primary condition was due to the involvement of the alimentary canal in the pathological process produced by the bacillus of Eberth and particularly marked in the appendix. It did not seem to me that a suspicion of approaching typhoid fever negatived an operation, when every one was agreed that the symptoms of appendicitis were present with sufficient severity not only to justify but to make necessary operative interference. I advanced these views to Dr. Hearn, who admitted that the symptoms were already severe enough to justify an operation, and who confesed that he had not a very good reason for refusing to perform it, save that the possibility of a coming attack of typhoid fever might perhaps decrease the chances of recovery from the operation, and this feeling on his part, combined with the fact that I had seen such cases get well without operation, both when they were suffering from ordinary appendicitis and when complicated by typhoid fever, led me to agree to the postponement of operative interference. On the following day the symptoms of appendicitis were no more marked than before, and, to state matters briefly, the symptoms of appendicitis gradually faded as those of typhoid fever became more and more accentuated; so that at the end of the week all of the symptoms of appendicitis had disappeared and typhoid fever was present in its fully-developed form. I could cite several other instances, but this one and that which follows seem to me sufficient as illustrating this type.

The second case was that of a boy, nine years of age, who was seized with a violent attack of pain in the lower right abdominal quadrant during a visit to the seashore. He was treated for this by rest in bed and the administration of purgatives, and on returning to Philadelphia ten days later was again taken down with pain in the neighborhood of the appendix, the development of distinct muscular rigidity over the right side of the abdominal wall, a quick pulse, and pain also in the neighborhood of the right hypochondrium and epigastrium which was increased by pressure over the appendix. In addition to

the local symptoms, the general condition of the boy was that which indicated the presence of a grave illness, and I asked Dr. Musser to see him with me in consultation, Dr. Musser agreeing with me that the symptoms were obscure but distinctly appendicular in type. This case differed from the first in that the symptoms at no time were sufficiently severe to indicate an immediate operation. But they certainly were sufficiently marked to make us think strongly of sending for a surgeon, in order that he might watch the case with us and determine when it would be wise to operate. Here, again, in the course of a few days, under the use of an ice-bag, the appendicular symptoms disappeared, and the child passed through an attack of typhoid which, considering his age, was quite severe.

There are several interesting points in regard to these cases. In the first place, it is of interest that in a certain proportion of cases of typhoid fever the illness is ushered in by symptoms which are most marked in the right lower quadrant of the abdomen. Second, the interesting question arises as to the condition of the appendix and caput coli under these conditions. Third, the further question arises as to whether or not operative interference in these cases is necessary, and, if operative procedures are instituted, whether they are advantageous or disadvantageous; and, finally, whether or not there are any conditions present in such cases which will enable us to state that the patient is suffering from a distinctly local lesion or from a general infection by the specific micro-organism of typhoid fever.

As I have stated in the beginning of my paper, I have now met with so many instances of appendicular trouble in the early stages of typhoid fever that I have come to regard it as by no means rare. In regard to the condition of the caput coli and appendix, it would seem probable that one or two conditions may be present. One of these is that of ordinary appendicitis, due to the pathological conditions which produce this disease, which happens to occur simultaneously with the onset of typhoid fever, and the other is that the case may be one of those in which the early general symptoms are mild, yet the intestinal lesions are marked. This condition is very well shown in the colored drawing in the well-known atlas of pathology by Kast and Rumpler. In this illustration we see how ulceration in the neighborhood of the caput coli could very readily produce great tenderness, abdominal resistance, and other local symptoms closely resembling appendicitis. In other words, I believe that in such a case the physician must make a differential diagnosis between true appendicitis and the condition represented in this illustration. The question arises as to how this may be done; that it must be done is evident, because in the case of ulceration of the caput coli operative interference is not only useless but dangerous, chiefly because of the shock to the patient's system when he is already suffering from a grave infection. I must confess that I do not believe that there are very definite clinical symptoms which will enable us to make the differential diagnosis, and I am inclined to believe that much importance should be paid to the results of examining the blood. From what we know of leucocytosis, we can rest assured that in ordinary cases of appendicitis the white blood-corpuscles will be considerably increased, whereas, on the other hand, it is a well-known fact that in typhoid fever they are not increased. And, therefore, in all probability typhoidal ulceration in the neighborhood of the caput coli, while it might produce the ordinary subjective and objective symptoms of appendicitis, would not show distinct blood-changes. This was the case in the first patient that I have spoken of to-day. An examination of his blood failed to reveal any leucocytosis and this was considered by us an important diagnostic aid. That this aid cannot, however, always guide us is proved by still another case in which the symptoms of appendicitis developed much later in the course of typhoid fever than in the two cases just described, the patient being in the third week of the disease before the positive evidences of an appendicular abscess were present. During the whole course of his illness this patient, who was a middle-aged man, complained of more or less pain in the right side of his abdomen, which was often most severe almost as far up and as deep in the back as the posterior portions of the liver and kidney. Finally, after a marked chill, distinct bulging not only in the neighborhood of the appendix anteriorly but posteriorly over the pelvic bones, with slight edema on deep pressure, forced us to operate and no sooner was an incision made in the abdominal wall than a pint and a half of extremely fetid pus escaped which contained staphylococci and the bacillus coli communis, but in which the micro-organism of typhoid fever was not found. In this patient there was a very slight leucocytosis, not sufficiently marked to justify us in positively stating that there was an acute inflammatory complication of the typhoid process, and yet the white cells were sufficiently increased to prevent us from ignoring the change in their number.

It has generally been held by physicians and surgeons within the last few years that the presence of a rapid pulse, a scaphoid belly-wall, distinct muscular resistance and violent pain are all symptoms demanding operative interference for appendicitis. And I do not think that the mere possibility of the patient being about to pass through an attack of typhoid fever is any reason in itself for refusing the patient operative relief, although I recognize, of course, that the development of typhoid fever immediately after such an operation is a grave complication.

I regret that this paper must be more suggestive than positive in its conclusions. My own feeling is that these cases of appendicitis in the early stages of typhoid fever are even more difficult to advise than ordinary cases which are certainly difficult enough, and I am, as I have already stated, at a loss how to proceed when I

meet with them in practice. Were it not for the results of examining the blood I should feel myself still more uncertain.

THE PHYSIOLOGICAL EFFECTS OF PREPARATIONS OF THE DUCTLESS GLANDS.[1]

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If the great broadness of the subject included in the title is borne in mind, I am sure that I will be pardoned for prefacing my remarks by saying that in submitting the following brief and rather disconnected résumé of the effects produced by the internal administration of the so-called extracts of these glands, I do so with the usual misgivings which always accompany the consciousness of having to deal with a subject about which, after all, comparatively few definite facts are known. Nevertheless, during the past eight years it has become undoubtedly an established fact that preparations of some of these ductless glands are endowed with very remarkable therapeutic properties, and, unlike many former fashionable drugs of questionable merit, some of these preparations have evidently come to stay and already occupy their well-merited places in our useful materia medica.

If the trade-lists of prominent manufacturing drug firms are consulted, we find at our disposal extensive collections of preparations of practically all of the ductless glands, all of which, generally speaking, as far as my experience goes, have been prepared from the proper tissues that they are purported to represent. Thus, the thyroid gland, the pituitary body, the thymus, the suprarenal capsule, the spleen, and other organs from various animals can all be found usually in the form of desiccated powders upon the shelves of the average modern apothecary-shop. Further, since the fact has been prominently emphasized that some of these desiccated preparations, curiously misnamed extracts, vary considerably in both constitution and physiological activity, in late years certain other preparations purporting to be the active organic constituents of the glands extracted by chemical processes have come also into extensive use, especially in Europe. Thus, the above-mentioned element of uncertainty is supposed to have been eliminated.

Although American medical literature in regard to the use of these special ductless gland derivatives is quite meager, nevertheless, I think that if the profession at large was more practically acquainted with the action of at least one of these substances, the so-called thyro-colloid described by Hutchinson,[2] the reports relating to the uncertainty of the action of certain thyroid preparations in cases where thyroid medication is eminently indicated would be far less numerous.

In looking over the enormous organotherapeutic literature of the past few years, one is almost overwhelmed at the extraordinary number of diseases that have been treated, generally speaking empirically, with on or more preparations of these glands. Sometimes the results, often photographically demonstrated, surpassed all preconceived anticipation, at other times the patients were benefited only enough to deserve the comprehensive term "improved," and last, but not least, in many instances although often no effect was produced by some of the substances, some patients manifested either at the beginning, or during the treatment, more or less marked symptoms of an intoxication, analogous to those generally met with in some forms of ptomain poisoning. How these remarkable well-recognized curative effects come about, scientific medicine still seeks to explain definitely, for although many theories have been advanced, all the existing explanations, broadly speaking, are still in the form of more or less unsubstantiated theory. However, the facts detailed in the various widespread papers devoted to the general and special physiologic action of these gland preparations undoubtedly indicate to us that some of them, especially the thyroid preparations, are capable of inducing a very profound increase or metabolic activity, probably both anabolic and katabolic, in the diseased human organism although in the healthy human organism the effect seems to be usually not so pronounced.

In the infancy of organotherapy it was customary to administer the soluble constituents of these glands by injecting them subcutaneously in the form of aqueous glycerin extracts, but owing to the immediate occurrence of symptoms, often of an alarming nature, such as severe nausea, syncope, profound prostration, etc., as well as the subsequent development of painful abscesses, such a method of administration has fallen practically into complete and well-merited disuse. Although many pronounced curative as well as toxic effects followed this mode of introducing these glandular constituents into the body, I shall not discuss the possible or probable explanation of such effects, for, as has been pointed out by others, this portion of the problem is not only exceedingly complex but will probably continue to remain obscure until physiologists and physiologic chemists give us more definite information regarding the exact nature of the various vital and chemical reactions that are inaugurated in the organism by the action of the ductless gland constituents. As most of these animal extracts when endowed with any general therapeutic activity seem capable of preserving their activity after absorption from the alimentary tract, I shall confine myself, necessarily very briefly, simply to the effects of the ingestion of such extracts. But before describing the effects in detail of the individual extracts, I wish to reëmphasize certain remarks formerly made by myself in reference to the commercial preparations of desiccated thyroid, namely, that when we are dosing people

[1] Read before the New York Academy of Medicine, April 19, 1900.
[2] Hutchison, R.: Brit. Med. Jour., Jan. 23, 1897.

with these dried animal extracts it is well to bear in mind, when analyzing the resultant effects, that, generally speaking, we are giving not simple substances, but compound substances, whose activity, curative or toxic, may vary within wide limits in spite of the fact that all the said preparations emanate from the same manufacturing firm. While such variability in activity no doubt partly depends on the susceptibility of the individual recipent of the preparation, I am very sure that much of it depends on certain little-understood chemical alterations which occur in the complex organic components of these tissues during the processes incident to their formation into dried powders. Usually the method by which they are prepared is somewhat as follows: After comparatively large quantities of the glands have been accumulated in the slaughter-house they are then transferred to the preparing department or shipped, packed in ice, to some distant manufacturer, where after being freed from the superfluous fat and usually adherent dirt, they are ground up and an equal amount of salt is frequently added. This mass is then spread in thin layers in pans and placed in the desiccator, from which, after the expiration of a week or more, it is removed and finely pulverized. Ample time thus exists for subtle chemical changes to occur, and, in fact, in the case of the thyroid juice, it is well established that the normal alkaline reaction is extremely liable to become acid within one or more hours after the removal of the gland from the body of a recently-killed animal. Consequently it is not so astonishing when unexpected, very disagreeable results follow the ingestion of some of these preparations, whose mere odor, often pronounced, assuredly labels them as decidedly putrefied.

As far as my personal limited experience goes with the administration of preparations of dried lymphatic glands, of the spleen, and of the ovary, I have little to say. The occasional alleged effects due to them, generally speaking, also occur with the various preparations of nuclein which doubtless is their main active ingredient. Until further definite data in regard to them are forthcoming, judgment as to whether they really produce regular and definite effects should be suspended.

Pituitary Body.—Owing to the pathologic observation, that enlargement of the pituitary gland coupled possibly with a derangement of its hypothetical internal secretion is of such frequent occurrence in acromegaly, much was anticipated at first from the internal use of this gland. Experimentally, the internal administration of the pituitary substance appears to produce an increased katabolism of tissues rich in phosphorus and poor in nitrogen. Up to the present, however, the clinical results with it apparently fail to come up to the previous anticipations. Several other observers, as well as myself, have noticed that the headache usually complained of in acromegaly is sometimes lessened, or temporarily disappears, and the patient considers for the time being that he feels better. In the second of two cases of this disease treated by me with dried sheep's pituitary the headache apparently increased slightly, and on substituting the fresh pituitaries from sheep, calves, oxen, or pigs, for the dried, no recognizable effect seemed to be produced, although from 25 to 30 glands were given daily.

Although the intravascular injection of an aqueous extract of this body produces a temporary increase in the blood pressure, absorption of the gland through the alimentary canal does not appear to be accompanied, either in the healthy or in the diseased individual, by any blood-pressure changes that are recognizable by means of sufficiently delicate and properly calibrated arteriodynamometers and tonometers.

Suprarenal Extract.—As such an enormous quantity as two pounds of fresh suprarenal capsules, in the form of an aqueous extract, have been swallowed without apparent ill effects, the fact is quite evident that the untainted suprarenal substance, although containing ingredients which markedly influence the general blood-pressure and ultimately poison the experimental animal, when they are injected directly into the circulation, evidently loses its toxic properties when absorbed from the alimentary canal. Given internally in the usual doses of 5 or 10 grains several times a day, I can not say that I have ever been able to detect those remarkable vascular and tonic cardiac effects which are stated to follow almost immediately. Summed up, the suprarenal extract has been used with more or less varying success in disease of almost every part of the body. Applied locally to mucous membranes it undoubtedly produces very marked local but temporary vasoconstriction from its direct action upon the muscular coats of the vessels. Consequently, this useful property has been duly taken advantage of in congestive conditions of the conjunctiva, of the nose, the throat, and of other mucous membranes. Given internally, the extract seems to have benefited certain cases of asthma, cardiac trouble with diseased arteries, and several cases of Graves' disease. In three cases of the latter disease, however, which were treated by me with the suprarenal during a period of about two months, I can not say that the beneficial effects were specially striking, in fact, they were not nearly so marked as I have seen produced by phosphate of soda in combination with rest and regulation of the diet.

But in accordance with the theory of internal secretion and by analogy from the action of the juice of the thyroid gland one of whose functions seems to have been fairly satisfactorily proved to be that of contributing to the blood an internal secretion absolutely necessary to the organism, we should expect on pathologic and experimental grounds that the most striking effects of the suprarenal therapy would be met with in Addison's disease. Nevertheless, the published records of the many cases of this disease that have received a thorough trial with the suprarenal, do not, I

think, on the whole, convey the impression that our hopeful expectations have been satisfactorily realized. Owing to the pressure of other matters, and consequently lack of time for a thorough inspection of the medical literature, I have, so far, been able to collect reports of only twenty-four patients with this disease to whom the suprarenal extract had been administered. Of these one may say that none were sufficiently benefited as to be termed *cured;* 14 exhibited effects that could be designated *temporarily improved,* while 10 were practically unaffected by the treatment. Making the usual allowances, therefore, for this kind of broadly inclusive statistics, it appears to me that evidently there exists a something in the desiccated suprarenal that is capable of ameliorating, at least temporarily, some of the symptoms in about 58 per cent. of the cases of Addison's disease. Whether this something is the substance that elevates the blood-pressure when the extract is directly injected into a blood-vessel, whether it is a derivative of that substance formed from it during the process of absorption from the alimentary canal, or whether it exists as a separate, hitherto unrecognized, body in the gland, I am not prepared to judge until further comparative clinical investigations are made with the pure solutions of that substance which elevates the blood-pressure.[1]

Thymus Gland.—Previously used for years as a choice and nutritious article of diet, the thymus was first introduced to the medical profession in 1893 by Macalister, who lauded the remarkable metabolic effects apparently produced by a diet of it in a case of pseudohypertrophic paralysis. Two years later Owen, Miculicz, and myself, reported several cases of exophthalmic goiter in which a thymus diet apparently produced pronounced improvement and even apparent cures. Since that time many cases have received the thymus, some with evident benefit, others apparently without effect. From the use of desiccated preparations the beneficial effects are not so apt to follow, in my experience. Thus, in ten cases of well-marked exophthalmic goiter treated by me with dried thymus in but three of them have I observed enough amelioration of the symptoms to deserve to be called improved. In these three cases the pulse-rate was reduced, the weight slightly increased, the enlarged thyroid diminished, although not to its normal size, the exophthalmus practically disappeared in two of the cases, and lessened in the third. In two other patients acute symptoms somewhat analogous to those produced by toxic thyroid preparations occurred. In another instance, after prescribing capsules of dried thymus, as the patient appeared to be more restless and complained more of cardiac palpitation, an examination of the capsules showed them to be composed of dried thyroid. Consequently, they were immediately discontinued and the disagreeable symptoms promptly subsided. Of twelve patients treated with fresh lamb's thymus, or with that from young calves, all gained in weight, some of them as much as 30 pounds, in the course of three months, and one has remained apparently cured for the past six years; in another patient all the symptoms permanently disappeared except that of the large indurated goiter. In three of the patients there was no evident benefit, except an increase in weight, while of the remaining seven cases various degrees of evident improvement were manifest.

Numerous hypotheses have been advanced to explain the metabolic effects produced in these cases by the thymus, but from my point of view I think that in the present rather indefinite state of our knowledge in regard to the exact activity of the various constituents of the thymus, we should better be conservative and attribute the above-mentioned excellent results to the nutritious character of the food which such patients are receiving when they eat several ounces of slightly-cooked thymus daily.

Thyroid Extract.—Of all the various animal extracts, undoubtedly that prepared from the thyroid produces the most conclusive, regular, and striking results when it is administered in those clinical conditions which after years of painstaking labor on the part of clinicians and experimental investigators we now recognize as being due to diminished thyroid function. Thus, in myxedema, cretinism, and other conditions in which the thyroid gland is imperfectly performing its function, the administration of the ordinary preparations of dried sheep's thyroid is certainly productive of metabolic effects that may truly be termed marvelous. In such conditions the exhibition of thyroid appears, if we may judge from urinary analyses, to produce a remarkably increased disintegration of certain tissues in rich nitrogen as well as a moderate increase in the amount of excreted P_2O_5. Concurrently with the increased metabolic activity all those pronounced and often described improvements in the symptoms become prominent. Briefly summarized these may be enumerated as follows: Disappearance of the myxedematous tissue, with return to the former normal body weight; renewed growth of the hair; return of the normal condition of the skin and mucous membranes; markedly-improved or complete restoration of mentality; increase in stature, and full restoration of the bodily strength.

Also in many other diseased conditions, such as excessive obesity, psoriasis, goiter, ovarian or uterine tumors, idiocy, and other conditions too numerous to mention, in which the thyroid extract has been used, evidently a very profound general, as well as local metabolic, activity has been produced by its use. Given in doses greater than the equivalent of fifteen grains of fresh gland, most of the dried thyroid preparations readily induce, as most of you, no doubt, have practically observed, symptoms of a more or less pronounced kind of intoxication, which in the

[1] The intravascular injection of aqueous thyroid extract produces a marked fall of the general blood-pressure, but solutions of purified thyroideolloid, which contain apparently all those constituents that are effective in myxedema, do not cause the blood-pressure to fall.

severe forms somewhat resemble some of the symptoms occurring in exophthalmic goiter. Usually these symptoms are practically identical with those generally met with in poisoning by chemically-altered or decomposed animal food-stuffs. Thus, one often finds reported such symptoms as increased pulse-rate, severe headache, pains in various regions of the body, profound prostration, tremor, restlessness, insomnia and even delirium, nausea, vomiting, diarrhea, glycosuria, and albuminuria, but, as I have pointed out in a former paper, the character and severity of such symptoms vary considerably and depend chiefly on the kind of preparation employed, as well as upon the individual susceptibility of the patient. For instance, during the early part of the past year I had under my care two cases of recurrent myxedema. One of these patients has had administered to her all kinds of thyroid preparations, and being apparently a very susceptible individual, she would become so profoundly poisoned in a few days by an average dose of dried thyroid extract that the treatment had to be temporarily suspended or the dose very much decreased. Generally speaking, her myxedematous condition also improves very much under such conditions, some preparations of thyroid, although profoundly toxic to her, utterly fail to influence her myxedema. On the other hand, large doses of purified colloid obtained by a slightly-modified Hutchinson[1] method from sheep's thyroid, five hours after excision, were taken without the least sign of intoxication and the myxedematous condition was rapidly dissipated. In the second case, that of a man, in spite of the considerable consumption of large numbers of the thyroid tablets of a well-known firm, and of the accompanying symptoms of a mild intoxication, the myxedematous condition slowly increased until his weight became 165 pounds. On substituting for the tablets the purified colloid in doses of three grains daily a rapid disappearance of the myxedematous condition, unaccompanied by the least symptom of intoxication, promptly followed, and at the end of six weeks the weight of the patient had returned to what he considered normal, namely, about 142 pounds. Therefore, for the above obvious reasons, I never prescribe at present the ordinary commercial desiccated thyroid preparation if I can avoid it, but prefer to use the more reliable and equally active purified *colloid*, obtained by myself from the freshly-removed thyroids of sheep by precipitating an alkaline solution of them with glacial acetic acid as advised by Hutchinson.[2]

With reference to the efficiency of iodothyrine, I have little to say. As far as my experience with it goes, it does not seem to be nearly as active as the colloid from which it can be readily obtained by the proper chemical treatment. In many normal, as well as diseased people, it does not perceptibly influence the metabolism, while relatively smaller doses of colloid that contains perhaps a far less percentage of iodine will readily produce all those marvelous effects in myxedema which have been outlined in this paper.

[1] Cunningham, R. H., Jour. Nervous and Mental Disease, June, 1898.
[2] Hutchison, Jour. of Physiol., XX., 1896.

IODIDE OF IRON IN THE TREATMENT OF CERTAIN FORMS OF INFECTIVE ARTHRITIS.[1]

By J. C. WILSON, M.D.,
OF PHILADELPHIA.

The treatment of certain forms of infective arthritis, especially gonorrheal arthritis, is notoriously unsatisfactory. The salicylates are useless either to relieve the pain or to bring the process to an end. Iodide of potassium is little better. Rest, measures to improve the nutrition, and local treatment include fixation of the joints and, later, massage and Swedish movements are rational procedures which do not, however, prevent disability and suffering, often protracted for months. Quinine, iron, and arsenic are prescribed on general principles. The treatment by dry air at high temperatures is occasionally but by no means always followed by good results. It is furthermore not available in all cases. Surgical measures, such as incision and drainage, are also sometimes useful.

For several years I have treated these cases with large doses of the syrup of iodide of iron with satisfactory results. Recently several gentlemen associated with me in clinical work have adopted this plan and bear testimony to its usefulness. A considerable number of successful cases could be collected from my hospital service and private practice in support of the plan. The clinical phenomena are, however, so variable that the mere marshalling of statistics may be misleading.

The following cases recently observed are fair examples:

Case I.—Susie S., eighteen years of age, German, unmarried, a waitress; admitted to the German Hospital, September 25, 1899. No member of her family has suffered from rheumatism. Excepting the diseases of childhood she has always had good health. Menstruation regular and normal; leucorrhea at times; no other pelvic symptoms. Denies exposure to danger of venereal infection. Pain in right shoulder and ankles, which are also lightly swollen and tender on pressure. Moderate elevation of temperature; no sweating. Was treated with salicylates and alkalies. Discharged October 21st, at her own request, improved. A diagnosis of acute rheumatism was made.

The patient was re-admitted to the hospital on the 28th of October, four days later, suffering from intense pain in the right shoulder and right knee. Moderate swelling; no redness; exquisite

[1] By the courtesy of the Committee on the Festschrift in honor of Dr. Jacobi.
Read before the Section on Practice of Medicine of the American Medical Association, Atlantic City, June 5-8, 1900.

tenderness. Signs of considerable intra-articular effusion in the knee. There was an elevation of temperature—102° to 104° F.—of subcontinuous type. The patient's general condition was wretched. Every movement was attended with intense exacerbation of pain in the affected joints. Appetite poor. Bowels constipated. Sleep prevented by pain except after the use of hypodermic injections of morphine. The cardiac impulse feeble; not visible, but palpable in the fifth intercostal space just within the midclavicular line. A soft systolic murmur at the base. Marked venous hum on the right side.

There was marked leucocytosis, gradually decreasing, as follows: November 8th, hemoglobin 65 per cent., erythrocytes 5,150,000, leucocytes 31,200; November 18th, hemoglobin 49 per cent., erythrocytes 4,070,000, leucocytes 23,200; November 23d, 61 per cent., erythrocytes 4,780,000, leucocytes 9,200; November 29th, hemoglobin 61 per cent., erythrocytes 5,580,000, leucocytes 7,200.

On the 8th of November the knee was aspirated and a clear straw-colored fluid obtained which yielded on culture a growth of staphylococci but no gonococci. On the same date an examination of the pudenda revealed an inflammatory condition of the mucous membrane with great redness and tenderness and a copious whitish discharge. The cover slip preparations from this discharge failed to show the presence of gonococci. The hymen was absent.

During the course of the case, namely, on November 4th, a splotchy erythematous rash appeared, first upon the face and neck, then upon the arms and hands, later upon the body and lower extremities. This eruption was not attended by pain or itching. On the third day after its appearance some of the spots became petechial and two days later many petechiæ showed themselves. This rash gradually faded out and had disappeared by November 19th. It was attributed to the sodium salicylate.

The urine was markedly albuminous and contained epithelial, hyaline, and granular casts and an excess of indican. At the time of the patient's discharge the urine contained a trace of albumin but no casts.

The treatment in this case from the time of admission until November 9th, a period of sixteen days, consisted in the free administration for a time of sodium salicylate in combination with sodium bicarbonate; later of sodium salicylate alone, 6 grams, afterwards increased to 9 grams, in twenty-four hours, in connection with phenacetin. Later oil of wintergreen was given in full doses. The local symptoms were unaffected by this treatment and the general condition became steadily worse until November 9th, from which time all other medication was stopped and the patient was given syrup of the iodide of iron in increasing doses. The dose was at first 2. t. d. In the course of a day or two the dose was increased to 3. t. d. and again shortly to 4. t. d. and finally to 4. q. die; and with this dosage practically a teaspoonful four times a day, the medicine was continued until the patient's discharge from the hospital.

Within a few days from the beginning of this treatment there was notable improvement not only in the general condition but in the arthritis. The temperature gradually fell and on November 21st reached the normal, from which it did not again rise. By the 19th the eruption had wholly disappeared. Upon the 20th it was noted that the peri-articular effusion was no longer present. Prior to this, pain and tenderness had ceased and in the course of a few days the function of the affected joints was restored and the patient was able to be out of bed. On the 20th a ten-per-cent. ichthyol ointment was applied to the knee-joint and continued for some days.

Case II.—John H., twenty-two years of age, a chairmaker by occupation, was admitted to my ward in the Pennsylvania Hospital September 24, 1899. The patient said that he had suffered from inflammation of the stomach when a child, but otherwise had had good health. He had never had rheumatism. Had used alcohol at times to excess. Had gonorrhea about a year ago, the discharge lasting about two months. Since that time the patient had not been in very good health. About two weeks prior to admission began to feel tired and suffered from headache; had some diarrhea and was unable to work. Presently there developed stiffness of the joints with great pain, which prevented him from sleeping. The first joint implicated was the left knee; later the shoulders, the other knee, and the joints of the fingers. Upon admission the patient had fever, restlessness, and delirium. Tongue dry and brown, with sordes; moderate cardiac hypertrophy; faint systolic murmur in mitral area and at base, not transmitted; some tympany without abdominal tenderness. Knee-joints much swollen, tender, and painful, without redness. The other affected joints somewhat better than at first. Urine acid, 1018; contained pus and large numbers of red blood-corpuscles; albumin, probably due to the blood.

The treatment consisted at first of salophen, 10 grains, q. q. h. together with sodium bromide 20 grains, the local application of soap liniment and oil of gaultheria to the joints. A few days later this was exchanged for an alkaline treatment, without advantage. On the 2d of October he was given salophen again in larger doses, and later potassium iodide. His condition up to this had remained about the same. On the 4th of October it was noted that his mental condition had improved, but on the 6th his condition was again worse, with delirium and much complaint of pain in the knees and through the head and neck. The former treatment was stopped and patient was given syrup of the iodide of iron m. xxx, q. die, to be increased m. i. each day. The dosage was progressively increased until the 5th of November, when the patient took somewhat more than a dram of the syrup of the iodide of iron four times daily without repugnance or the slight-

est derangement of the digestion. Meanwhile his condition has steadily improved. By the end of October the temperature had fallen to normal and the patient was about the ward on crutches. He was discharged entirely recovered on the 17th of November.

Case III.—David D., twenty-one years old, a clerk, was admitted to my service in the Pennsylvania Hospital October 19, 1899. Had gonorrhea three years ago, during the course of which there was pain in the left shoulder and in both feet. These pains continued eight months and have occasionally recurred. Two weeks ago a second attack of gonorrhea occurred, which continues. Was admitted to the hospital on account of severe pain in both feet, with great tenderness and swelling and inability to walk. A purulent urethral discharge with blood. Was treated with strontium salicylate, 10 grains, sext die, and salol. In the course of a few days a slight improvement resulted. On October 26th it was noted that the pain in the feet was very severe and that the urethral discharge had ceased. He was given syrup of the iodide of iron in doses m. x, t. d. Two days later no improvement. The syrup of the iodide of iron was increased to m. xx, t. d. At this time there were pain, tenderness, and swelling in the right knee. November 5th, given the syrup of the iodide of iron m. xxx, t. d., the dose to be increased by the addition of m. i daily. On the 8th, condition generally improving. On the 15th, improvement in the general condition and in the joints; able to walk about the ward. On the 28th was discharged cured. In this case the constitutional disturbances were slight and the temperature ranged between 97° and 100° F. during his sojourn in the hospital.

These cases not only illustrate the curative influences of the syrup of the iodide of iron, but they also place the results of treatment by this medicament in striking contrast with the failure of ordinary anti-rheumatic remedies such as the alkalies, the salicylates, salophen, and potassium iodide.

In Cases I. and II. the treatment was conducted in my absence for a considerable period of time by a medical friend temporarily in charge of the wards. It was not until my return to the German Hospital early in November that Case I. was treated with the iodide of iron and the same change was made in Case II. upon my taking the service in the Pennsylvania Hospital about the first of October. In Case III. other measures of treatment were at first designedly employed in order to place the iodide of iron treatment in contrast with them.

Gonococci were not present in the vaginal discharge in Case I., and doubt as to the essential nature of the infection naturally arises. There is no question, however, as to the character of the infection in Cases II. and III.

It would be idle to speculate as to the process by which the therapeutic effect is produced. The subject belongs to the wide realm of empirical therapeutics. Favorable results have frequently been obtained in the convalescent cases by the substitution of gelatin-coated pills of the iodide of iron for the syrup, but in the acute cases the pills are of inferior value.

MOULDS IN THE STOMACH.

By J. H. KELLOGG, M.D.,
OF BATTLE CREEK, MICHIGAN.

For several years the writer has given special attention to the study of the bacteria of the stomach. This study has been carried on extensively and in a practical way. Over 8,000 stomach fluids have been examined, in the laboratory under his direction, with reference to the number of bacterial elements present, including germs and yeast, and the character of these organisms, especially with reference to their ability to produce acids, toxins, etc. The number of cases in which moulds were found is very considerable. They were found 457 times in 7,000 analyses, representing nearly as many different individuals. In many cases only one or two colonies were found, while in others many colonies were present, the number varying from half a dozen to as many as 800.

The sources of moulds in foods are rather numerous. The *Oidium lactis* is nearly always found in milk, especially when it begins to sour, and is almost constantly present in butter. The almost universal use of these articles constitutes an abundant source for this common mould. *Aspergillus fumigatus* thrives at body-heat, and readily finds its way into the stomach through the use of bread, in which it is commonly present. The *Aspergillus flavescens* is likewise capable of developing in the body, flourishing, as does *A. fumigatus*, at the temperature of the body. Moulds, like various bacteria, give rise to fermentations and putrefactions, converting the hydrocarbons into alcohol and acids, and producing toxins, sulphuretted hydrogen, leucin, tyrosins, etc., from proteids.

As regards the effect of these organisms upon health, *Oidium lactis* has been shown to have a decided irritant effect upon the gastric mucous membrane, giving rise to diarrhea, sometimes even producing febrile gastritis, or gastric fever. Koch and Gaffky have shown that some of the moulds are constantly pathogenic. This has been proven to be especially true of *Aspergillus flavescens* and *fumigatus*. Injection of bouillon inoculated with these moulds into the veins of a rabbit produces death within twenty-four hours to three days. A post-mortem examination of a rabbit killed in this manner shows, under proper staining, colonies of moulds growing upon the surface of the internal organs everywhere within the body. The malicious influence of the long exposure of the organisms to the toxins produced by the moulds is well shown in the disease *pellagra*, which so often occurs in Italy as the result of eating mouldy grain. The writer has noticed in many instances the most pernicious ef-

fect from the use of butter which may have been due to the presence of a considerable quantity of *Oidium lactis* in the same. It frequently occurs that patients are entirely unable to eat ordinary fermented bread. This may be due in many cases to the imperfect cooking of the interior of the loaf and to the presence of yeast; but in the bacteriological examinations of various specimens of bread made in the laboratory under the writer's charge, yeast has been found present much less frequently than was expected; the spores of mould, however, being much more tenacious of life than yeast, their presence may, perhaps, be held responsible for the great disturbance not infrequently set up by the ingestion of yeast or fermented bread.

Glenard has pointed out the fact that persons with dilated stomachs are unable to make use of milk in any form. I myself have frequently confirmed this observation, and have become so thoroughly convinced of its utility that I have for a number of years made it a routine practice to forbid the use of milk by patients suffering with marked dilatation of the stomach. A possible cause may be the decomposition of the milk by moulds, and the production of toxins.

The most pronounced and marked case of mould infection of the stomach which came under the writer's notice was one registered as No. 7932, in which 800 colonies were found in one cc. of stained fluid. The case was a pronounced one of hypopepsia. Only eight milligrams of free hydrochloric acid were present. Moulds grow in acid media, so that they are often present in both hyperpepsia and hypopepsia, but with much greater frequency in hypopepsia. In 475 cases noted, there were found 32 cases of simple dyspepsia, 176 of hyperpepsia, while 249 were cases of marked hypopepsia.

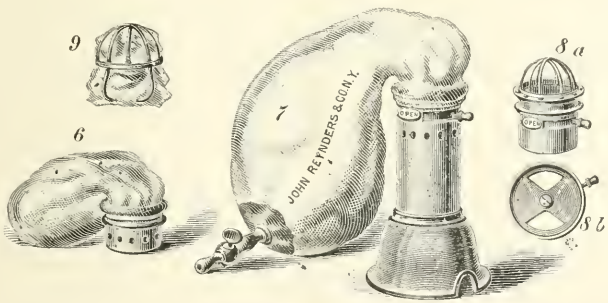
The full significance of moulds in the stomach fluid is perhaps not yet fully understood. The subject is one deserving further investigation.

A SIMPLIFIED APPARATUS WITHOUT VALVES FOR THE ADMINISTRATION OF NITROUS OXIDE ALONE OR IN COMBINATION WITH ETHER.

BY S. ORMOND GOLDAN, M.D.,
OF NEW YORK;
INSTRUCTOR IN GYNECOLOGY IN THE NEW YORK POLYCLINIC.

THE inhaler consists of a perforated long central cylinder into the distal end of which telescopes a smaller one (8) containing a revolving obturator (8*a*); (the obturator is not an essential part of the apparatus, being simply used to avoid the waste of gas); a rubber gas-bag (7) with hard rubber shut-off; a small perforated cylinder with thin rubber-bag (6) for use during ether anesthesia; a metal basket containing gauze (9) upon which ether is poured.

When using the apparatus for gas inhalation alone proceed as follows: Thoroughly collapse the bag, forcing out all atmospheric air; close the obturator by revolving directly opposite to point marked "open;" fill the bag fairly well with gas; have the patient's head turned fully to one side; apply inhaler to face, seeing that the face-piece fits snugly and that there are no crevices through which air may enter; then turn the obturator to "open" and instruct the patient to breathe in deeply for from thirty to sixty seconds. Gas anesthesia will then be complete and is evidenced by cyanosis, stertor, jactitation, insensitive conjunctivæ, and hard, full pulse. If rapid and shallow respiration is present and if gas is to be continued, a breath or two of air should be admitted until the stertor and cyanosis cease; then the gas may be readmitted. When gas is used alone the patient should not be permitted to fully regain consciousness before the gas is readmitted. It will be noticed that with this apparatus the patient breathes the gas over and over again, for this reason the bag should occasionally be collapsed and refilled with fresh gas. This should be per-



Inhaler *without* Valves.

mitted to enter the bag from time to time to keep it fairly well filled.

If the administration of ether is to follow that of the gas, one should proceed as before until the patient is anesthetized. Then the inhaler should be very quickly removed and the basket with gauze, upon which from half an ounce to an ounce of ether has been previously poured, quickly inserted and pushed well forward to obturator when the inhaler is again applied. The patient thus breathes ether and gas; occasionally coughing occurs or the patient will hold his breath when a breath or two of fresh air may be permitted by tilting the inhaler, after which ether narcosis very quickly replaces that of gas. Anesthesia is complete within two to four minutes in most cases depending upon the type of the patient. After ether anesthesia is complete the cylinder with the gas-bag may be removed and the smaller cylinder with the thin rubber-bag may be applied making the inhaler much lighter in weight. This is an advantage during long narcoses. Air may be admitted in various ways: (1) By removing the inhaler entirely from the face; (2) by withdrawing the small cylinder with rubber-bag attached, thus making a perfectly open inhaler; (3) by revolving the inner cylinder until the openings meet where from one to five may be had; by withdrawing the smaller cylinder until the inner series of perforations appear, ten in all.

The apparatus is extremely light, durable, portable and inexpensive, and its simplicity commends itself alike to the occasional administrator and the hospital interne.

225 West 45th Street.

THE CONTINUED USE OF THE ANTISEPTIC AND ELIMINATIVE TREATMENT OF TYPHOID FEVER WITHOUT ANY DEATHS.[1]

By T. VIRGIL HUBBARD, M.D.,
OF ATLANTA, GA.

Continued and uninterrupted success with the antiseptic and eliminative treatment, with convincing clinical illustrations of its inevitable correctness, forces me to disregard the sage advice of Shakespeare and repeat some remarks I made before this Association one year ago. Assuming the risk of being ridiculed for repeating the truth and, perhaps, denounced for making it so emphatic, I acknowledge my cheerfulness to submit to either affliction, if by so doing I may induce some of my professional friends to cast aside their theoretical objections, which are too often but the delusions of a dream capable of being swiftly dispelled by the awakening light of clinical experience with the treatment.

With profound respect for these gentlemen (for some of them I love) who differ with me from a theoretical standpoint, I must confess a failure to see the logic in attempting to combat clinical results with theoretical argument, especially when that argument is based on an acknowledged inexperience with this treatment and is influenced and sustained by the passion and prejudice naturally engendered by following for years a contrary course of treatment. If medicine were an exact science, if we could demonstrate the correctness or incorrectness of its theories as we can a mathematical problem, there would then be some logic in resorting to mere argument to meet the mortality statistics, but at the present time the court that renders the final decision, and from which there can be no appeal, is the number of deaths which follow from this or that line of treatment.

That we are all creatures of habit and routine is, unfortunately, too true, and medical men are no exception to the general rule. A study of the history of medicine reveals the fact that all new theories or advances in treatment undergo a struggle for existence in their infancy, and the friends of this treatment are not in the least discouraged because it is undergoing the fire of denunciation and criticism which characterizes the radical change of any established treatment. It would be nothing short of a miracle if the medical profession should spontaneously adopt the eliminative treatment, a treatment almost the opposite of that which has been taught and practised for the past twenty-five years, regardless of its correctness or incorrectness. A child reared in a Protestant family, and taught the edicts of that religion, is not likely to embrace Roman Catholicism, nor *vice versa*. In the same manner the young man who is taught in his college course that cold water is the proper treatment for typhoid fever, and has practised it for years after leaving his alma mater, is not likely to adopt the eliminative treatment without indubitable evidence of its correctness.

I will briefly repeat the treatment which I recommeneded in a paper read before this Association one year ago, and I have very few additions to make to the same. When called to a case of typhoid fever, I usually commence by giving the patient a capsule containing calomel, ½ gr.; guaiacol carbonate, 2 grs., podophyllin, 1/20 to 1/10 gr., every two hours for twenty-four to forty-eight hours, depending on the condition of the bowels. I continue this until I have secured four or five intestinal evacuations for two successive days, and then I stop administering the calomel and add ½ gr. of menthol to the guaiacol and podophyllin. If, after discontinuing the calomel, there is any tendency for the bowels to become inactive, as there frequently is, I administer a small dose of salts or Hunyadi water in the morning. I always endeavor to secure at least two or more evacuations daily, depending on the temperature and the condition of the bowels. If, after four or five days of treatment, the temperature remains high, or rises after having remained stationary, I again resort to the calomel as before for twenty-four hours, or less, as necessary, and it invariably reduces the temperature and results in a general improvement in

[1] Read before the Medical Association of Georgia, April 5, 1900.

the patient's condition. I continue the administration of guaiacol and menthol throughout the course of the disease.

In addition to this I frequently resort to the administration of normal salt solution per rectum, and have been very much gratified with its results, especially in those cases where the skin and kidneys failed to act well. It seems to me that in any toxemia normal saline solution would do good by diluting the poison in the blood and favoring its elimination by the skin and kidneys, and, in cases of very high fever or severe toxemia and an exhausted condition of the patient, I would promptly resort to its subcutaneous administration.

I will consider first the least important, the antiseptic part of the treatment. It has been said by the opponents of this treatment that it was impossible to render the alimentary canal aseptic by the administration of drugs, an opinion in which I have always heartily concurred; but I was surprised a year ago to find opposition to this treatment from some of our surgeons who practise aseptic technic in their operations. If they will but reflect for a moment, it is this same broad principle which, applied to surgery, has rescued it from a chaotic state of empiricism and elevated it to a scientific basis. Would any modern surgeon fail to wash out and drain an abscess cavity because he could not render it aseptic at the first operation? Should he fail to irrigate an infected wound because he could not cleanse it of every drop of pus and every microorganism at the first irrigation? If a patient is bleeding from three ruptured arteries, and from an anatomical situation one of them can not be reached, does it lessen the obligation of the surgeon to place a ligature around the other two? So in typhoid fever, if we cannot thoroughly disinfect the bowels and thus reach ideal results, must we peacefully fold our hands and acknowledge with mortification and chagrin that we can do nothing but amuse the patient by pouring cold water on the skin? Is this the course the surgeon pursues in a case of infection? Is it not our plain and unequivocal duty, with our present knowledge of the causation and pathology of typhoid fever, to resort to the following measures? First, such as will remove as far as possible the offending agent from the bowels, and, secondly, such as will render the intestine as far as possible an unfit culture-tube for multiplication and development of the various micro-organisms which are to be found there, as well as prevent fermentation and putrefaction of food products. Is not the efficacy which has for a long time been attributed to that good old remedy, turpentine, been due almost exclusively to its antiseptic properties? But, whatever may be said in favor of the administration of intestinal antiseptics in typhoid fever, they play an insignificant part as compared with those remedies which have for their function the promotion of elimination from the system of the toxins by stimulation of the emunctory organs. It is to the accomplishment of this result that the successful clinician will chiefly address his efforts.

I would most respectfully invite the attention of those who have attempted to refute something I have never claimed in reference to intestinal antiseptics to the eliminative part of this treatment. I presume that no one is so obsolete in his views as to maintain for a moment that the intestinal ulceration *per se* in the bowel-wall is the cause of the constitutional symptoms of typhoid fever. If so, how does he account for those fatal cases of typhoid in which no intestinal lesion is found post-mortem? The most convincing fact gleaned from my experience with the eliminative treatment is that entirely too much importance has heretofore been attached to the intestinal ulceration and too little importance to the constitutional condition of the patient. The sins of omission are too numerous to mention which may be justly charged upon that timid physician who sits by a case of typhoid waiting and expecting perforation of the bowel or fatal hemorrhage while assuming an attitude of passive indifferenee, fearing something which in the large majority of cases will never happen, and on this account withholding food and drugs while the life of his patient is surely but slowly ebbing away from starvation and toxemia. That a healthful reaction has set in against a too-restricted diet in typhoid fever no one who is familiar with recent articles in the leading medical journals can deny.

I am convinced that a large number of typhoid patients have died from want of food, and it is equally true that a great many have passed to the "beyond" because they were unable to digest and assimilate what was given them, owing to the torpid condition of the liver and diminished secretion of gastric and intestinal juices, a condition which could be largely overcome by the administration of proper drugs. The ulceration of the bowel has been the great bugbear of the physician: the objective point on which he has centered his therapeutic vision, and yet if it does not produce perforation or a fatal hemorrhage it is of no more prognostic significance than if it were on the leg of the patient, barring the exception that it may act as an absorbing surface for other germs than the bacillus of Eberth.

While the attention of the physician has thus been directed to the condition of the bowel and temporarily distracted by the fear of perforation or a fatal hemorrhage, which only occurs in about two or three per cent. of the cases, he has wilfully and persistently neglected those measures at his command which would prevent the death of his patient from exhaustion and toxemia. Some old writer has said that the physician should always obviate the tendency to death and we can sometimes learn more from one case that dies than from ten cases that recover by studying the cause of the death. I think we shall gain some practieal information by closely observing the cause of the tendency to death and become more active in the use of those remedies which com-

bat that tendency. The sooner we look upon typhoid fever as a constitutional poisoning of the system very similar to an average case of septicemia and treat it accordingly by assisting Nature to eliminate the poison or destroy it in the system, the sooner we shall diminish the mortality of this disease.

There are certain established facts about this disease that I think all will agree to and accept. *First, that the cause of typhoid fever does not originate de novo in the human organism, consequently it must be introduced from without. Second, that this causative agent introduced from without and the poisonous products it generates within come under the head of a constitutional poison and may be found in almost every tissue of the body. Third, that at the present time we do not possess a direct chemical antidote whereby this poison may be changed into a harmless compound.*

With these propositions admitted, a poison introduced into the system, circulating in the blood, found in the different tissues of the body and for which we have no chemical antidote, our duty becomes very plain and the therapeutics of this disease very much simplified. What would we do in other cases of poisoning with something for which we had no direct antidote? Would we not attempt to eliminate it from the system? The rational procedure, then, is the elimination of this poison from the system, and its egress can only be accomplished by stimulating to the fullest functional capacity the liver, bowels, kidneys, and skin—the natural eliminants. That Nature when left alone attempts to throw off the poison by these organs is clearly shown by the fact that their secretions contain the lethal products and will convey the disease. Fütterer found that bacteria injected into the portal vein appeared in the general circulation in one minute, and he also demonstrated that elimination of the germ from the system by the liver and kidneys was very promptly inaugurated. He suggests that this eliminative function of the liver explains why the typhoid germ is so often found in the gall-bladder and bile-ducts, where it frequently sets up an inflammatory process. Adami has also demonstrated that the liver-cells normally possess a bactericidal function aside from that of elimination.

With these facts before us, I think we should apply those remedies which from a knowledge of their physiological effect we believe will most actively and harmlessly assist nature in this eliminative process. Although opinions may differ as to the efficacy of this or that drug, there can be no question as to the object to be accomplished. Those who practise and teach nihilism in reference to the treatment of typhoid fever should recognize the fact that there are sins of omission sometimes greater than those of commission, and that there are other pit-falls in the pathway of the physician than that of mischievous activity in the administration of drugs. The "innocuous desuetude" into which some teachers and practitioners of medicine have lapsed in reference to the drug treatment of infectious diseases, and especially typhoid fever, together with the common acceptance of the purely imaginary theory that because a disease is produced by a germ it must necessarily run a definite and specific course, unmodified by any remedial measures, is to my mind the most rational explanation of the fact that so many laymen are to-day seeking relief at the hands of water-cure men, Christian Scientists and osteopathists—a fact of which we have glaring illustrations in our own city. The advice given by a prominent text-writer in this country that the physician in managing a case of typhoid fever should assume an attitude of "armed expectancy," would, it seems to me, if strictly adhered to, be the indirect cause of more deaths from this disease than any advice which might be couched in any other two words in the English language. Analyze those words, what do they imply? They mean that the physician should nurse the patient and wait for complications, thus shattering to smithereens the good old doctrine that "an ounce of prevention is better than a pound of cure." Of what practical value is the most up-to-date and thoroughly-equipped therapeutic armamentarium in the presence of perforation of the bowel or a severe hemorrhage in typhoid fever? Even although the physician expected it to occur, even although he be prepared with all known measures to meet the condition, of what practical value is it to the patient when he almost invariably passes to "that land from whose bourne no traveler returns," and leaves the physician in a state of melancholic reflection on the inadequacy of his "armed expectancy."

I think it wiser to use those measures which in a large number of instances will prevent the complications than to await their development and then attempt to repair their ravages. That complications can be prevented by the administration of the proper remedies, I have conclusively demonstrated by my own clinical results. In selecting those remedies which will most effectively promote elimination, we naturally place mercury at the head of the list as the great glandular stimulant. That it is justly entitled to the first place as a secretory and excretory stimulant, years of experience have conclusively proven. It is immaterial into what remote part of the system or what complex tissue the typhoid germ or its toxin may migrate; that it cannot evade the presence of this protean drug is shown by the fact that the secretion from the testicle of the male and the mammary gland of the female are no exceptions to the ubiquitous presence of this drug. Those who have never used mercury throughout the course of typhoid fever and have objected to it on the grounds that it was exhausting and tending to weaken the patient, entirely overlooked the fact that it is a tonic in small doses in health and disease. Cabot and others demonstrated that it will increase the number of red blood-corpuscles and the hemoglobin, and augment the body-weight in small doses. There is practically

no drug of value which in the hands of the careless or ignorant would not do harm. Quinine is a specific in malarial fever. Mercury is a specific for syphilis. But who will deny that you can kill a malarial patient with quinine and a syphilitic with mercury? Does this fact, however, lessen their value when properly, carefully, and scientifically administered in these diseases?

It is to the proper administration of calomel in typhoid fever that I desire especially to call attention. If those gentlemen who are skeptical regarding the efficacy of this treatment will administer the drug in small and oft repeated doses, carefully watching for its constitutional effect, they will find that it will control the unpleasant symptoms and fatal tendency of this disease. While it has this effect in small doses, yet to give it in five- to seven-grain doses three times a day would be as irrational and as open to criticism as to start a syphilitic on the same large dose. I have conclusively proven that a typhoid patient can take more mercury without purgation or salivation than the same individual can take when not suffering from the disease. I think we may attribute some of the good effect of mercury in typhoid to the stimulation of the production of white blood-cells which are the great protectors of the system in all infectious processes. While I can not state this positively, because I have not counted the cells while a typhoid patient was taking mercury, yet I think we are justified in assuming this on theoretical grounds.

I have up to the present time treated twenty cases of typhoid fever by this method without any deaths. Other men have treated a large number of cases without any deaths, and the collected results give a mortality of less than 2 per cent. The erroneous position of those who oppose this treatment, and at the same time admit that they have never used it, is too conspicuous to require more than passing notice. If our friends will resort to the same unprejudiced investigation and seek that same high class of indubitable evidence, clinical results, which has characterized our investigation of the subject, they will then be competent witnesses, and we will welcome with enthusiasm a report of their results. When an individual or scientific body of investigators desires to determine the efficacy of any new therapeutic measure, do they seek the opinion of physicians who from want of experience with that measure are unfamiliar with its results? Or do they rather inquire of those men who, having had clinical experience with the use of the measures under consideration, are qualified to give testimony? If a physician treats a given number of cases of appendicitis medically and gets a mortality of about 10 per cent., by what rule of logic would he be justly entitled to condemn the measures of a surgeon who operated on an equal number of cases and got a mortality of 2 per cent.?

The physician who has never witnessed the contrast in the clinical picture of a typhoid patient on the eliminative treatment, as compared with one on the expectant plan, can no more appreciate its efficacy than a person born blind can appreciate the beauties of Nature. If he has never witnessed the prompt disappearance of delirium, the restoration to consciousness of the clouded intellect, prompt return of the appetite and digestive capacity and gradual but sure reduction of temperature, he has in store for himself one of the triumphs of his profession, and a scene which will give him renewed confidence in the healing art. It is the truth we are seeking in this matter regardless of the source whence it sprang, and if our opponents will show by clinical experience with this treatment that the mortality is as great or greater than with any other method now known, we will then, but not till then, cheerfully acknowledge our error.

CLINICAL MEMORANDUM.

BRIEF NOTES ON RHEUMATIC JOINTS TREATED BY HOT AIR.[1]

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SINCE the demonstration of the hot-air apparatus, as used by an English company at the Hospital for Ruptured and Cripplied, several years ago, I have had occasion to see a great many cases treated both at the hospital and in private practice. I have had under my own care quite a number of cases which have been treated and benefited by this method. We were not favorably impressed with the apparatus, as made and used by the English company, on account of its bulk and cost, so we devised a portable apparatus, which we could easily carry about with us in a small box and promptly put into use in almost any room. The portable box, which we have used in many instances, is fitted with tubing for attachment to the ordinary gas jet, and has an aperture for either the hip, knee or ankle, made large or small, as required, protected by asbestos, with a small aperture for registering the temperature.

Case I.—A young man with gonorrheal rheumatism, which had not responded to various antirheumatics. Exquisitely sensitive knees and legs held almost at a right angle, knees much swollen. Treatment was begun. The temperature was sent up to 200° F. and kept at this point for fifteen minutes the first day. This temperature was maintained at various sittings during the following week, when gentle massage was employed immediately following the baking process. The temperature then was carried up to 300° F. and the duration of treatment extended to a full half-hour. This method of treatment was continued for perhaps two months.

[1] Read before the Section on General Medicine of the New York Academy of Medicine, March 20, 1900.

meantime he became tolerant to the increased heat, the swelling subsided, and he could get about the room with comparative ease.

Case II.—A girl of twenty-two years with arthritis of the hip. The joint was sensitive, held slightly flexed and presented many of the symptoms of hip-disease. She had been freely cauterized to the point of scarification, six or eight cicatrices presenting over the head and over the gluteal region. She was unable to stand, the pain was so intense, when treatment was begun. She was put on antirheumatics and the hot-air treatment was begun. The first sitting lasted fifteen or twenty minutes, when she could stand 150° F. This was, however, increased in a very short time from one-half to three-quarters of an

Fig. 1.

Portable Hot-Air Box.

hour and the temperature was carried up to 350° F. Rather vigorous massage was immediately employed and she was able to use the limb quite freely. She went out for short walks daily. At the expiration of three months she could go about without assistance. She was free from pain or discomfort, had a very slight limp, and has recently written me that she is at her vocation (that of a school teacher) and has had no return of symptoms, and was much benefited by treatment.

Case III.—A man fifty-six years old with arthritis of the right knee. He had been more or less rheumatic for years and had relied on the antirheumatics. When seen, his knee presented considerable extra heat, was swollen and sensitive. This was treated in the same way, that is, the temperature at first was low, the sitting lasted for a few minutes and gradually increased. The swelling subsided and he was able to get about without a crutch or stick, and consequently was much improved.

Case IV.—Rheumatoid arthritis of the hands. A woman thirty-four years old. She presented the usual distorted fingers, the swollen and sensitive joints, and also an inflamed wrist. I applied the hot air to these joints daily for five weeks. At the expiration of that time the swelling and sensitiveness had about disappeared; she was able to grasp articles and to flex and extend almost to the normal. This was a case moderate in degree.

Case V.—A man thirty-five years of age, while playing golf injured the left knee. This, he thinks, occurred while he was in the act of driving, his knee giving way. He continued to play, however, and in going down a little ravine, twisted the knee again. He was seen soon after he returned to the club house and his knee was swollen and sensitive. It was immediately basket-strapped and that afternoon was put in the apparatus, which I happened to have, and at the expiration of three or four sittings he was able to use the knee quite as freely as the other, but has worn for a while, following repair, a stockinet bandage about the knee.

Case VI.—A man, fifty-five years of age, sprained his right wrist while playing golf. This was done in England and his effort to play here resulted in lighting up the vulnerable joint. There was very little swelling, but the joint was very sensitive to manipulation. He had worn the leather wristlet usually worn by athletes, but that did not render him quite free from pain. He submitted to the hot-air box and treatment, which lasted from one-half to three-quarters of an hour, for two weeks. I had a letter from him last fall, telling me that he had no return of the symptoms and played golf almost everywhere he had been.

These cases I have presented, as they show the variety of rheumatic or gouty conditions with which we have to deal, and which have responded more or less to hot-air treatment.

Nearly every college trainer is familiar with this treatment of sprains and injuries to foot-ball players. That is, the joints, I believe, are steamed rather than treated with superheated dry air. The superheated air produces profuse sweating, increased cell-activity, and is a tonic to the general system. In several cases of rheumatic flat foot I have been able to break up the adhesions more easily and less painfully by first subjecting the feet to the hot-air box for half an hour. I could then maintain what I had gained by adhesive plaster. I have thus reported a few cases of sprains which do not come under rheumatic joints. I have also seen many old tuberculous joints much benefited by the hot-air box, followed by vigorous massage.

These cases have done well under this method of treatment, but I have seen quite as many with symptoms almost as marked which have not responded so promptly, and this forces us to conclude that the superheated air does not always give the desired result in the treatment of rheumatic joints, but is sometimes indicated as an adjuvant.

MEDICAL PROGRESS.

Intracranial Pressure.—W. N. Bullard (*Jour. Amer. Med. Assoc.*, June 30, 1900) calls attention to the advisability of trephining in certain cases of increased intracranial pressure of unknown cause, and cites the case of a woman who for years suffered at intervals from "feelings of pressure" inside the head and during these attacks lost self-control. Physical examination gave negative results; there was not any affection of either optic nerve or retina, and the mind was unaffected. The cranium was trephined on the right side, just in front of the coronal suture one inch from the sagittal suture, and the hole enlarged to about three by two inches. The tense dura bulged about one inch and did not pulsate. The protruding portion of brain was excised and the wound closed without suturing the dura. After two years the patient was still free from all trouble and had become the mother of a healthy child. Such cases are not so very rare and are occasionally classed as neurasthenia. From this and a few somewhat similar cases he reaches the following conclusions: There exist certain non-traumatic cases of increased intracranial pressure of unknown or doubtful origin; whenever such pressure causes serious symptoms one must consider operative relief; in certain cases cure may result and in all cases more or less permanent relief will be obtained; in cases of severe acute optic neuritis of unknown origin the question of relieving pressure by trephining should be considered.

Epilepsy.—In a paper on epilepsy, W. P. Spratling (*Buffalo Med. Jour.*, June, 1900) states that the disease is found most frequently (1) during early infancy and dentition, (2) during the period covered by the seventh and eighth years, and (3) during the marked transitional period of puberty. Among the causes are: (1) Direct transmission from parent to child; (2) accidents at birth; (3) intense pathological processes that should be physiological; such as difficult dentition, especially in rachitic or scrofulous children; (4) indigestion and malassimilation; (5) accidents of early life, and (6) the grave physiological disturbances that come at puberty. For prognostic purposes it is essential to divide epilepsy into that form due to some physical defect or deformity and into the true form of epilepsy in which no direct cause is apparent and in which the physician can do far less good. Treatment may be in institutions or at home; in the latter case, too much parental sympathy, the too liberal use of medicines, especially of the proprietary kind, and improper food often defeat the object in view. It is important that patients should have meat but once a day and that at noon and only in small quantities; they should have nothing fried in grease and no pies or other pastry. They must eat largely of cereals, milk, fruits, eggs and butter. Of drugs, the fluid-extract of horse-nettle berries has given satisfaction since it does not impair the functions of the digestive tract. Simulo, also, has given excellent results. A combination of bromide, chloral and morphine is often of service in aborting an expected seizure preceded by a long aura. Great stress is to be laid upon the systematic exercise of all the muscles of the patient's body, such work as can best be done being prescribed after a thorough physical examination.

Choice of Operations in Uterine Cancer.—J. B. Deaver (*Jour. Amer. Med. Assoc.*, June 30, 1900) does not believe that vaginal hysterectomy must necessarily be done by a gynecological specialist as distinguished from the general surgeon. He favors the abdominal route in the great majority of cases for the following reasons: The lymphatics of the uterus and its adnexa run to the lumbar, internal iliac and superficial inguinal glands, and it is not unusual to have them involved on both sides; they can be reached only by the abdominal route and must be extirpated if there is to be any hope of recovery; there is far less danger of injuring the ureters, and when they are injured in vaginal operation the abdomen must be opened secondarily; catheterization of the ureters, with its difficulties and dangers, is unnecessary; danger of hemorrhage is lessened since the field of operation is clearly visible, and for the same reason secondary hemorrhage is much less likely to follow; peritoneal infection is far less apt to occur, since the intestines can be carefully guarded; visceral protrusion into the vagina is more apt to occur in the vaginal hysterectomy. The vaginal operation is applicable only to those cases in which only the vaginal cervix or the cervical or uterine canal are involved and the uterus freely movable.

Acute Sternal Osteomyelitis.—E. Koch (*Münchener med. Wochensch.*, June 19, 1900) states that modern surgical methods of diagnosis and treatment have during the last decade done very much to clear up obscure cases of bone-disease. The special feature is that the question of osteomyelitis should always be raised when the trouble is in a long bone and near the medulla. Many obscure or indefinite joint-lesions belong to the category of foci in the epiphyseal cartilage. Small pus-deposits in the ribs may suddenly provoke virulent empyema and at times acute intracranial abscess has its origin in the ostitis of the cranial vault. Ten years ago acute osteomyelitis of the vertebral column was hardly a known disease, yet to-day many cases of acute spinal disease may be ascribed to single or multiple infection of the bones, often ending fatally and demonstrated by autopsy. Analogous to this is acute

disease of the sternum. Only seven cases appear in literature. Sick who has written a careful detail of four cases adds one each by Tuengel and Salomon and Schede. The eighth case is that of the author. This disease is fatal, as five of these eight patients died. The writer's case was mistaken for pneumonia until an abscess appeared low down near the ensiform cartilage and later on a second sinus opened near the right nipple. The early course was very like a pneumonia, so that diagnosis was tentatively rational. Unlike tuberculosis, acute ostitis of the sternum appears to affect the body rather than the manubrium. The necrosis may affect the posterior aspect, set up mediastinitis, or the anterior lamella and not the deep thoracic structures at all. The seriousness of the trouble rests entirely with the escape or the involvement of the pleura, lungs or mediastinum structures. In three of five autopsies the pleura was attacked. The rescue of the author's case was due to the early free drainage outward of the foci, which fortunately had not worked in deeply. But the premise remains that five deaths in eight means a poor prognosis. In the author's case the osteomyelitis was solely of the sternum; in several others different bones were also affected. The conclusion is that whenever a bone-lesion, even in the sternum, is suspected early and free exploration be resorted to in order to avoid spread and complications and perhaps death.

Use of Brain Substance in Nervous Diseases.—Not only has the attenuated virus of Pasteur proven most efficacious in the treatment of hydrophobia, but similar results have followed the injection of brain-emulsions obtained from normal animals; further than this, functional nervous diseases, such as neurasthenia and epilepsy, have been favorably influenced, which all tends to show, according to V. Babes (*Klin. therap. Woch.*, June 17 and 24, 1900), that the various toxins to which the nervous system is especially susceptible and to which the symptoms of epilepsy, etc., are in main due, in the presence of foreign brain-matter in the blood will combine more readily with this than with the nerve-cells of the animal affected and thus will forestall such chemical changes as probably lie at the bottom of most functional neuroses. The author is positive that suggestion may be ruled out as an active factor in his cures, since he has been equally successful with children and adults and since mental diseases, where the subconscious self is clouded, have yielded not less remarkably.

Brain Injury.—E. E. Dyer (*Lancet*, June 16, 1900) reports three cases of brain injuries with two post-mortems. Case I.: Laborer, aged twenty years, struck by revolving steam winch handle, compound depressed comminuted fracture of vault, with large scalp wound over left ear; unconscious, insensible except to strong stimuli, labored stertor, free local hemorrhage, twitchings and convulsions. Trephined and one large and several small pieces removed, dura sound to naked eye. Depression still present in vault, relieved by elevation with fingers. Breathing at once better. Gradual recovery of consciousness, asking for things wanted; drain out on third day; no suppuration. On the ninth day reddish erysipelatous swelling appeared over nose, high temperature, soon disappeared. On the seventeenth day sat up in bed and ate solids. On the twenty-first day a similar red mass appeared on the parieto-occiput. Photophobia now set in and death occurred on the twenty-sixth day. The post-mortem showed a healed wound, a fracture extending to the left ear, thence along the base through the left orbital plate and across the vault to the right ear; dural thickening and adhesions to the site of injury; pus over the meninges at vertex, base and spinal cord; abscess of each frontal lobe. The clinical features were edema due to abscess which in left side broke into the ventricle and relieved tension and temperature; large destruction of brain substance; extreme photophobia; length of time patient survived, and absence of paralysis. Case II.: Soldier, aged fifty-six years; no definite history; ill several days before admission; right hemiplegia; slow speech and cerebration; old left keratitis; eighth day violent convulsion, controlled by morphine and chloral; no more convulsions, but frequent twitching; death twenty-four days after admission, thirty days after first seizure; nourishment taken up to day of death; highest temperature 99.8° F.; no affection of breathing. Post-mortem lesions were as follows: Dura frequently and firmly attached to the calvarium; its veins enormously dilated; brain substance very soft; on section left hemisphere showed three clots, the first, 1¾ inches in diameter, near surface just below the fissure of Rolando; the second lower down, inside the middle frontal convolution; the third in the occipital region; on the right side three other clots in about the same sites and sizes were found; of all the oldest was in the right frontal and the newest in the right occipital lobe; a seventh clot was in the left cerebellar hemisphere. Apparently the cerebellar clot alone caused the convulsions, because there was only one attack of them. The difference in the ages of the frontal clots ought to have caused two sets of convulsions which was not the history. Case III.: Brain injury without death. The patient, a lad, was caught between a fixed upright beam and a horizontally moving machine arm ¾ of an inch square; small temporofrontal scalp wound; probe disclosed fracture and tract into brain, 2½ inches deep, by its own weight; no operation; sterile dressings; recovery; at time of injury he walked 200 yards for medical help. These cases seem to show great effort by the brain to repair damage and ability to sustain enormous injury.

Kraurosis Vulvæ.—This rare but troublesome affection of the external genitals of the female, writes G. L. Himmelfarb (*Annales de Gynécologie et d'Obstétrique*, June, 1900) occurs in adults from twenty years to old age, and in the virgin as well as the parous woman. Its etiology is not well

known, though some observers give gonorrhea, syphilis, or continued irritation as the probable cause. It predisposes to cancer. The affection begins in the superficial layers of the skin producing at first an inflammatory hypertrophy and hyperplasia of the connective tissue, edema of the dermis and epidermis, and degeneration of the elastic tissue. Later, this passes into the atrophic stage with marked retraction, blanched dry skin, and a thickened epidermis between the labia majora. The latter are shrunken, and the nymphæ appear as slight projections. The neighboring parts of the skin are shiny, dry, of a rosy gray color, and dotted here and there with white spots penetrated by bunches of vessels. The sebaceous and sweat glands and the hair-follicles have almost disappeared. The parts are much retracted, and tear very easily; the walls of the vagina are smooth. The course of the affection is slow, lasting some years, and the symptoms are: burning sensations, marked pruritus, painful micturition, feelings of tension, and sharp pains. Owing to the retraction and narrowing of the vaginal orifice, coitus is difficult, painful, and may result in laceration, and severe tears accompany childbirth. The only treatment that so far has been effective is the extensive excision of all the parts involved.

Mitral Stenosis.—The presystolic murmur characteristic of mitral stenosis is composed of three parts, writes C. C. Gibbes (*Medicine*, July, 1900). First, audible right ventricle muscle vibrations, which on account of the two ventricles not acting synchronously are heard while the left ventricle is in diastole. Second, a murmur caused by the flow of blood from the left auricle into the left ventricle. And third, the slapping first sound, which is truly a part of the murmur. The apex of the heart in pure mitral stenosis is formed by the right ventricle, and the left ventricle is not in contact with the chest-wall. The left ventricle has a short systole and a long diastole: and in order to compensate for the mitral obstruction, the right ventricle has a prolonged systole and a short diastole, the early part of its systole being auricular in rhythm, and occurring while the left ventricle is in diastole. This is borne out by the almost constant reduplication of the second sound when the heart is properly compensated, by the frequent reduplication of the first sound, and by absolute necessity owing to the high tension in the right ventricle and the low tension in the left. When there is some failure of compensation the presystolic murmur may be lost, though audible muscle vibrations can still be heard, the lost portion of the sound being that contributed by the auriculo-ventricular blood-current. The reduplicated first sound may also be heard in other conditions, for example, in sick children, especially if the pericardium is adherent, and in mitral regurgitation. In the latter, as the heart gains in strength this pseudopresystolic murmur without the crescendo character and the slapping first sound, passes off, and a pure mitral systolic is heard. Even in anemia there may be lack of synchronism, with a deceptive pseudopresystolic murmur.

Three Symptoms of Rickets.—Referring to the three most characteristic symptoms of rickets, W. N. Berkeley in *Pediatrics* (June 15, 1900) points out that (1) the rosary is sometimes missed because the examiner forgets that the osseo-cartilaginous junctions in the child are relatively farther by an inch from the median line than in the adult. Instead of a genuine node only an angle may be found and again the tumefaction may be considerable on the inner side and absent on the exterior of the rib. (2) The characteristic head in rickets is the familiar prominence of the parietal bones, giving to the head its box-like shape. The anterior fontanelle instead of closing as it should between the sixteenth and nineteenth months remains open. The bony plates may be thinned, or completely softened, the latter symptom (craniotabes) sometimes occurring in otherwise perfectly shaped heads. (3) The liver and spleen should always be examined. The chronic intestinal indigestion furnishes toxic matter enough to cause a simple tumefaction of these organs, and to this is added the secondary anemia of rickets. The specific cause of the disease may also assist in producing an enormous liver and spleen. Compared with the liver the spleen is more apt to reach remarkable dimensions. Syphilis, leukemia and malaria should always be excluded in cases presenting large spleens.

"Floaters" in the Urine.—In a series of experiments W. F. Bernart (*N. Y. Med. Journ.*, July 14, 1900) has attempted to find out whether shreds found in the urine of a case of chronic urethritis of gonorrheal origin depend for the depth of their suspension upon the composition of the masses or the specific gravity of the urine alone. Specimens were voided directly into clean high beakers and at the end of one and a half hours samples were taken from the upper half, the lower half and the bottom. The floaters were examined, the urine filtered and the samples again returned. In every case it was found that the particles which floated in the unfiltered urine fell to the bottom in the filtered urine with the exception of an occasional mucous shred. The examination of the floaters followed the classification of Guyon, in which those which lie in the upper section of the urine are composed mainly of mucus and epithelium, those of the lower portion have an addition of pus, and those containing much pus sink to the bottom. The author concludes that, although the specific gravity of the urine and composition of the floaters are prominent factors in determining the position of the particles, yet their suspension at different depths is largely due to mechanical interference and there must be some substance in the urine which can be removed by filtration and which influences the action of the floaters materially.

Diabetes Mellitus.—The pathogenesis of diabetes mellitus is still unknown and the clinical picture must be relied upon to make a diagnosis of the condition. In the *Practitioner* (July, 1900), R. Saundby has reviewed the many theories in regard to the formation and excretion of glycogen and the several influences which control them. He believes that the causes of the disease may be divided into the conditions in which the liver is no longer able to reserve and store up glycogen, and secondly into the conditions in which the sugar consuming powers of the tissues is reduced. These result from (1) various functional and organic diseases of the nervous system of which neurasthenia must be placed in the front rank. The organic diseases consist chiefly of tumors of the medulla. (2) Pancreatic diseases including fibroid, fatty or calcareous degeneration. (3) Injuries or diseases of the liver itself. (4) Poisons, of which alcohol is the chief one. Simple glycosuria does not mean diabetes, but when it does not disappear readily under treatment and there is added polyuria, thirst and failure of nutrition the diagnosis is clear. The author believes that the best results are obtained from a restricted diet rather than from drugs, and he advises the use of such a dietary as would allow the patient about 500 grains of sugar-forming carbohydrates in 24 hours. It is desirable to continue the strict diet for some days or weeks in order that the tissues may regain part of their lost sugar-consuming power, and the duration of the regimen must depend upon the result upon the patient. Presence of acetone or diacetic acid in the urine demands an increase in carbohydrates. Milk is believed to be a very good food for such subjects, and can be given to diabetics without a corresponding increase in the sugar excreted. So far as drugs are concerned a grain of the extract of opium at bedtime is often beneficial in giving sleep and preventing the frequent necessity of voiding the urine. Bromide of potassium stands next in efficacy. Alkaline mineral waters, soda salicylate and citrate of potash are valuable in increasing the alkalinity of the blood, and when coma is feared strychnine must be given hypodermically and an ounce of sodium bicarbonate administered by enema in hot water and repeated every hour.

Atrophy of the Ciliary Muscle.—In the *New York Med. Journ.* (July 14, 1900) N. B. Jenkins reports the case of a young woman whom he fitted with very low convex glasses followed by the disappearance of all eye strain symptoms. Her glasses were lost and another person gave her concave lenses, and for the pain and dizziness she was given one-fourth-grain belladonna pills which she took once or twice a day for two months. At the end of this time the original glasses could not be used, but + 1.50 S glasses made reading very easy, the patient being blinded for distance. The trouble was probably atrophy of the ciliary muscle and may have been due to a central disturbance arising from the cumulative effects of belladonna, or to cerebral irritation from improper glasses, or paralysis of the ciliary muscle. The author believes that atrophy of the ciliary muscle is frequent and may be caused by disuse of the muscle, by the long continued use of mydriatics, or by glasses which give the muscle too little or too much work.

Causes of Diabetes Mellitus.—After reviewing the ordinary theories which have been advanced in regard to the causation of diabetes and showing that none of them have any constant relation to the disease, R. F. Williamson, in the *Practitioner* (July, 1900) lays considerable stress upon the so-called idiopathic cases or what Naunym calls the "pure diabetes." A number of writers suggest that these cases without pathological lesions are due to hereditary and congenital defects of sugar metabolism or are of endogenous origin. No hereditary tendency can be traced, however, in a large number of cases and it further seems that it would more frequently arise in younger persons if due to hereditary tendency. The author is inclined to believe that the condition is due to some toxic substance introduced into the system, usually through the alimentary tract. In some severe cases the sugar secretion may gradually diminish as the fatal termination approaches; and here the pressure of some other poison appears very probable. In mild forms, intermissions frequently occur under treatment suggesting that the toxic material is not being absorbed. Experiments on animals have shown that diabetic urine when given in large quantities to a dog will produce glycosuria and this result is obtained when the sugar has been removed. Leo believes this toxic product to be the result of the action of micro-organisms. The contents of the intestine of a diabetic when injected into a dog will produce glycosuria which does not happen when the intestinal contents of a healthy person are employed. Recent experiments, therefore, seem to promise some light on the cause of the disease and especially on the possible origin of many cases in an intestinal toxine.

Organic Murmurs Localized in Pulmonary Area of Heart.—Organic changes occurring in the right side of the heart are considered very rare except those which manifest themselves in the fetus or in early infancy. J. W. Bearman in the *Med. Rec.* (July 14, 1900) reports two adult cases in which were developed loud harsh systolic murmurs with greatest intensity over the pulmonary area, doubtless secondary to attacks of acute articular rheumatism. He believes that such a murmur may originate in the pulmonary artery itself as a result of structural change in the vessel or its valves, or as a result of pressure from without; or it is generated at the aortic or mitral orifice and conveyed thence in some manner to the pulmonary area. He reviews the literature to show that acquired affections of the pulmonary artery are very rare. Pressure upon the walls produced by an aneurism, mediastinal tumors or bronchial glands may cause a murmur

but their presence is very unlikely in the cases mentioned. The incomplete covering of the left lung may allow the cornus arteriosus to be pressed against the anterior chest wall and a murmur caused but this usually changes with inspiration because the lung is then forced in front of the pulmonary artery. An aortic obstructive murmur is sometimes heard to the left of the sternum with greater distinctness than to the right, but never, the author thinks, is the difference as great as in these cases. It then remains to consider the probability of the mitral valve giving rise to such peculiar murmurs. Naunym holds that the murmur is conveyed to the second left space through the dilated left appendix. This is usually heard, however, with maximum intensity at about one and a half inches from the sternum. Sansom and Balfour have suggested that such murmurs may be transmitted from the mitral valve which lies directly beneath the second left space near the sternum, and conveyed through the abnormally thickened or hardened tissues of the heart to the overlying chest wall. The author believes the mitral valve to be the cause of the murmur in his cases, the regurgitant sound being conveyed directly to the so-called pulmonary area.

Tumors Complicating Pregnancy.—Ovarian tumors which prevent the descent of the child may be punctured per vaginam and removed later, but if they are small they may, says G. W. Jarman (*Annals of Gynecology and Pediatry*, July, 1900), be pushed up out of the way by having the patient in the Trendelenburg position. Fibroid tumors at or near the fundus seldom cause trouble at time of delivery, but they prevent the rapid contraction of the uterus, and unusual precautions must be taken against hemorrhage. In the early months of pregnancy, if the location of the fibroid is such as to presuppose difficulty in the birth of the child, abortion should be performed, or, if this is impossible, hysterectomy. Otherwise it means a Cæsarean section, or a hysterectomy at term, with all their attendant dangers. In case of a pus-tube, which fortunately rarely complicates pregnancy, the great danger is sepsis following delivery, and the tube should be removed as soon as discovered regardless of the stage of the pregnancy. Operable malignant tumors should be removed at once; if inoperable, delay may be advisable in the interest of the child. Manipulation of the cervix seems prone to excite uterine contractions, so tumors of this segment are best treated at or near term. Cystic tumors of vagina and abscess of the vulvo-vaginal glands may be operated upon as soon as discovered.

Typhoid Fever in Montreal.—In a report on the ninety-eight cases of typhoid fever admitted to the Royal Victoria Hospital during 1899, B. D. Gillies (*Montreal Medical Journal*, June, 1900) gives the average age as twenty-three years, the youngest 3½ years, the oldest fifty-eight. Most of the cases entered during August, fewest during December; the duration of the fever was from eight to fifty-eight days, average 24.6 days. In almost all, the onset was gradual, the most frequent symptoms being malaise, frontal and occipital headache, anorexia, pain in back and legs, and chilliness. Twice a severe localized abdominal pain simulated appendicitis. Chills occurred in seventeen per cent., diarrhea at onset in twenty-one, epistaxis in nineteen, vomiting in thirty-four, in one case persisting throughout, and delirium, usually of low, muttering character, in nineteen per cent. The rose-spot eruption was present in seventy-two per cent., appearing from the fourth to the fortieth day, and lasting from three to twenty-seven days; it was petechial in only one case. The spleen was palpable in sixty-seven per cent., remaining so for from three to thirty-two days. Relapse occurred in thirteen per cent. lasting from eight to twenty-nine days. In half the cases the temperature reached 104° F. or over. Meteorism was present in twenty-five per cent., double parotitis in one case, cholecystitis in four cases, one being suppurative with gangrenous ulceration and cholelithiasis. Perforation occurred in two cases, on the tenth and thirteenth days, and intestinal hemorrhage in nine cases. Systolic murmurs appeared in five cases, femoral phlebitis twice, and brachial phlebitis once. Acute bronchitis was present at onset in fifteen cases, bronchopneumonia developed in one case, pulmonary edema in one, pleurisy with effusion in two; one case was complicated with tuberculosis. Periostitis developed twice, abscesses once, myositis of triceps and deltoid once, suppurative otitis media three times, acute nephritis four times. The Widal reaction was negative in only four cases, appearing from the fourth to the eighteenth day. Death was caused by intestinal hemorrhage in three cases, by perforation with hemorrhage once, by perforation once, and by toxemia twice. One case with cholelithiasis and cholecystitis was operated upon and recovered.

Abscess of the Cerebellum.—With almost no exceptions, abscess of the cerebellum follows otitis, says M. Dieulafoy (*Le Progrès Médical*, June 30, 1900). The otitis may be acute or chronic, with or without discharge, but as soon as the infection attacks the middle ear it extends to the antrum and the mastoid cells, and the danger is there. As intracranial lesions secondary to otitis we may have cerebral or cerebro-spinal meningitis, pachymeningitis, phlebitis and thrombosis of the sinus, and cerebral or cerebellar abscess. The general symptoms of the latter, no matter what part is affected, are occipital headache, vertigo, loss of equilibrium, staggering, drunken gait, vomiting, nystagmus, optic neuritis, cervical contractures, muscular asthenia, and a condition of somnolence, or torpor bordering on coma. If there is also paralysis of the external ocular motor nerve the affected lobe may be diagnosticated. Cerebellar abscess may be distinguished from labyrinthine disease by its more violent headache, its persistence, and its lo-

cation; and by the somnolence which increases from day to day. In abscess of the temporosphenoidal or occipital lobes of the cerebrum there are motor affections, paresis, contractures, spasms, but always on the side opposite to that of the lesion or the otitis; and aphasia and hemianopsia are important signs. In glioma, gliosarcoma, tuberculoma, and parasitic tumors of the cerebellum, there is a tendency to produce other than local symptoms by affecting the surrounding tissues. Syphilis must always be carefully sought for in the history.

Imperforate Hymen.—Mr. H. H. Borland (*Lancet*, June 23, 1900) relates the following case: Age 13 years; Dec. 30, 1899, diarrhea; 31st, abdominal pain; the state continued the same till Jan. 4, 1900, when diarrhea, bearing down pains, dysuria, finally retention of urine supervened; always good health; no menstruation; "large blue vein" noticed by mother at genitals but no operation had been done for it. On examination were noted extreme distress; crying with agony; great restlessness; good condition; womanly configuration; rounded breasts; abdominal enlargement apparently by a tumor rising two inches above the umbilicus; globular, uniform surface, firm and elastic without fluctuation; the vulva and perineum distended and between the labia a bluish vascular membrane bulged downward one inch or more, fluctuating distinctly; no dilation of the anus; rectal examination showed a tense elastic fluctuating mass encroaching on the bowel; further, this mass pushed up and occluded the urethra. The bladder was evacuated of urine, 5ij, by a catheter and the bowels by castor oil as the first steps in the treatment. The field was prepared for operation the next day, but the membrane parted slightly in the interval and slow evacuation of the retained molasses-like mass had begun. After a second cleansing of the field a full-length linear incision was made and widened by the index-finger to promote free flow of the fluid. A glass drain-tube to act as a bougie was put into the vagina and retained by dressings, and during urination by digital pressure. After micturition the parts were thoroughly cleansed. The mucosa of the vagino-uterine canal was perfectly smooth. Jan. 6th everything had gone well. No os uteri could be found. But the vaginal rugæ were present. Drainage appeared to be perfect. Jan. 12th no more discharge. Jan. 15th the rugæ were almost scirrhous and the uterus normal, its os being palpable and closed. It was directed that the tube be inserted twice a week for some time. Feb. 17th the girl menstruated normally.

Curvature of the Penis.—E. Fuller (*Annals of Surgery*, June, 1900, p. 717) reports a case of this disease which he defines as any resection or bending downward of the penis during erection thereby making coitus impossible. His patient when 12 years old contracted gonorrhea from his nurse. The disease ran an intense protracted course and resulted in a tight large stricture for which an internal urethrotomy was done. Violent inflammatory reaction followed this treatment and left an indurated area in the penis which during erection made the urethra stand out like the cord of a bow and curved the penis downward so that the sexual act was out of the question. The child was an only son and for legal reasons the parents accepted the poor outlook for any result from a plastic operation and consented not to blame for failure of any effort or for aggravation of an already bad condition by such failure. The plan was about the same as that followed in extensive urethral resections, namely to divide the canal and separate the ends of it very widely to accommodate for the diseased area and then by granulations permit the interval to close. The urethra was not attacked in the penile portion for fear of a persistent fistula, consequently the perineum was laid bare between the scrotum and the anus. After division to secure greater freedom the penile stump of the urethra was dissected from the surrounding tissue for three-quarters of an inch, and, after carrying the penis upward over the pubes and holding it there by traction, the roof of the urethra was carefully stitched *in situ* into its new bed and its floor divided for half an inch to gain space. No such interferences with the proximal stump were needed. The penis was strapped to the abdomen to secure it and urethral and vesical tubes applied for drainage. Recovery was prompt and uneventful. Two years after the young man could have almost normal erections and satisfactory coitus.

Castration or Resection of the Epididymis in Tuberculous Testis?—O. Lauz (*Deut. Zeitschr. f. Chir.*, Bd. 55, Heft 5 and 6, p. 453.) Conservative surgery, perfect antisepsis and improved resection technic have all led to the preservation of all possible parts. But although the French surgeons teach that removal of the tubercular epididymis is safe and sufficient the German opinion is that castration is always necessary because the testis usually is involved although macroscopically it may seem not to be. Again the frequency of tuberculosis in the other genito-urinary organs speaks against the priority of testicular invasion and hence the indication of simple castration. The soil afforded by the testicle for the tubercle bacillus appears to be only the poorest, yet when it does appear the epididymis is usually first involved and that after the disease has already been elsewhere in the genito-urinary tract, prostate, bladder, kidneys, etc. Bilateral consecutive involvement is common, but bilateral contemporaneous invasion is very rare indeed But since the loss of both testes is so grave a matter in man any procedure conserving them is of importance. Two cases are then narrated, in one the epididymis was removed and cure resulted. In the other castration was done and a testicle macroscopically normal was found microscopically involved. Other cases are also cited and in conclusion the pre-eminent safety of castration is insisted upon.

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SATURDAY, JULY 21, 1900.

SUNSTROKE.

THE hot wave which swept over the country the early part of this week brought infinite discomfort to both man and beast and a full list of fatalities. The denizens of the larger cities of course suffered the most. In New York the list of fatalities was unusually large. On Tuesday, which was the third day in which the thermometer stood at 94° F. at the registration bureau and 98° F. on the street level, cases of aphasia, suicide, and insanity, due to high temperature, were reported, and the bodies of thirty-three children were received at the Morgue ranging in age up to five years. Twenty-two of these came from institutions and eleven from residences. This takes no account of the many deaths that occurred among private families which were not reported at the Morgue.

It is well to remember in case of heat-exhaustion that the success of treatment depends upon the wisdom with which it is advised and the promptness with which it is administered. Roughly speaking, all cases may be divided into two classes, one characterized by intense congestion with high temperature and the other by anemia and collapse with subnormal temperature. In the former cases depletion is indicated even to the extent of blood-letting in addition to the simpler applications of ice and cold baths; in the latter stimulants are in order, such as ammonia, alcohol and strychnia.

VACATION HYGIENE.

MORE than one-fourth of the population of our American cities, during the heated term, find their way for longer or shorter periods to the country. Some of them, in their search for health, meet with dangers from disease that they would not encounter at their city homes. It is not unusual for the family physician to be called to treat cases of infectious disease occurring after a vacation that would not have developed under ordinary circumstances in town.

When the exodus to the country was shared by only a very small percentage of our city population those who went enjoyed all the benefits of country-life and suffered very few of its disadvantages. Now that the annual outpouring of city-folk is so large dangers from disease that surpass those of the city need to be carefully guarded against. And so it devolves upon the family physician to give such counsel in the matter as will make the status of modern sanitary conditions clear to those among his clients who seek recreation and health away from home.

Probably the most omnipresent danger to health in the country comes from the drainage. Means for the removal of waste material that are ample in winter, and that keep a little community in excellent health, may prove totally inadequate during hot weather, especially with an influx of visitors that perhaps doubles the population. This is a matter that is often not investigated at all when the selection of a country stopping-place for the summer is under consideration. Cesspits that served very well to retain sewage during the winter may with increased use prove ready contaminators of a water-supply even at a considerable distance. This contaminated water, even when no specific disease exists, maintains a constant state of hyperemic irritability of the intestines which predisposes, should the slightest occasion occur, to the successful implantation of typhoid-fever infection. Nearly every autumn city-folk have some family among their friends to condole with because of a death from typhoid contracted in this way.

In addition to the drainage and the water-supply there remains the question of the food. It

is sometimes the custom to assume that because people are residing in the country their food is necessarily always fresh. This was true in the idyllic days before all the city world fell to country-summering. The use of canned goods has, however, so permeated every stratum of modern life, that Corydon and Thyrsis in their Arcadian home would, in our day, surely use somebody's "best" brand of all sorts of preserves. With Arcadian simplicity, they would undoubtedly let them stand open from meal to meal and consider that if they had been preserved for a year, they certainly would not spoil in a few hours. Mistakes like this are the source of many an acute gastritis or more lasting dysentery and only the most careful precautions against involuntary errors on the part of well-meaning hostesses will prevent them.

Milk, because of its significance for the children to whom it is so imported, must receive special attention. In this matter it is a mistake to assume that country-supplies *must* be good. For the preservation of milk ice is absolutely necessary and is also effective. But ice is apt to be sadly deficient in the country. New York's milk-supply is gathered from a distance that necessitates its distribution on the average twelve hours after milking. Berlin derives its milk-supply from sources that require only six hours for its delivery. The average bacterial contents of the New York milk is considerably lower, however, than that of Berlin, because the milk is at once put on ice in this country and kept constantly at a low temperature until its delivery. Low temperatures inhibit the growth of bacteria. It is not so much the original number of bacteria that get into milk that make it dangerous, as the number that result by reduplication in so favorable a culture medium if an inhibitory low temperature is not maintained.

In a word, the sanitary regulations that have during late years so greatly reduced the mortality of large cities have made the general hygienic conditions of city-life better than those in the country. This is especially true for the times when an influx of visitors somewhat converts country conditions into those which obtain in the city. It is important, then, that prospective "summerers" should realize this and know definitely beforehand something of the surroundings to which they are to migrate.

For most of the summer resorts on the Continent European governments provide by law a board of health that assures the maintenance of proper sanitary conditions. In our country this, apparently, has not as yet been thought of and, owing to the nature of our National and State relations to public health, the establishment of uniform regulations would present serious difficulties. Family physicians must assume for the present, then, the duty of advising and warning in this important matter.

ECHOES AND NEWS.

NEW YORK.

Addition to the German Hospital.—The German Hospital and Dispensary of New York will erect a five-story brick hospital building, 45x81, costing $120,000, at the southeast corner of Lexington Avenue and Seventy-seventh Street.

New Day Nursery.—According to the plans filed with the Department of Buildings, the Brightside Day Nursery and Kindergarten will erect a five-sory brick and limestone building, 15x80, on the west side of Cannon Street, 175 feet north of Rivington Street. The cost is estimated at $35,000.

School of Clinical Medicine Not Closed.—We are credibly informed that this institution has not been discontinued. Six of the faculty resigned and announced that the school had disbanded but the directors have taken no action in the matter.

State Hospital for Crippled Children.—The following gentlemen, in addition to those already announced, have been appointed upon the Consulting Board of the New York State Hospital for the Care of Crippled and Deformed Children: Dr. Samuel B. Ward and Dr. A. Vander Veer of Albany, Dr. Jarvis S. Wight and Dr. John A. McCorkle of Brooklyn, and Dr. Richard B. Coutant of Tarrytown.

The County Society Medical Directory.—This directory for 1900 is just at hand. It appears in its usual form and dress, is reasonably complete and accurate and a valuable addition to every doctor's table whether he lives in New York, New Jersey or Connecticut.

Unregistered Physicians.—In a decision just filed in the Supreme Court, Justice McAdam holds that the New York County Medical Association is entitled to fines collected from physicians convicted of practising medicine without lawful registration.

Report of Contagious Diseases.—For the week ending July 14, 1900: Measles, 188 cases and 18 deaths; diphtheria, 214 cases and 33 deaths; laryngeal diphtheria (croup), 1 case and 2 deaths; scarlet fever, 74 cases and 9 deaths; chicken-pox, 4 cases; tuberculosis, 214 cases and 137 deaths; typhoid fever, 32 cases and 9 deaths; cerebro-

spinal meningitis, 10 deaths; totals, 727 cases and 218 deaths.

The City House Cleaning.—The Board of Health continues its disinfecting raids in various quarters of the city. Little Italy has been visited and marvelous results have followed. Chinatown has also received its visitation and a generous dose of disinfectants. It is believed now that proper policing of these localities will maintain a reasonable degree of sanitation, although the disinfecting process may be repeated at any time.

Obituary.—Dr. Samuel Russell Welles died at his home in Waterloo, N. Y., July 14th. He was born in Waterloo, February 23, 1825; was graduated from Geneva College (now Hobart) in 1845, and received the degree of M.D. at Buffalo University in 1848. In 1862 he entered the military service as acting assistant surgeon in the 61st Regiment, New York State Volunteers, and received a commission in March of that year. In 1875 he was elected a trustee of Hobart College and was twice sent to the Legislature from Seneca County.

Victims of Tetanus.—Benjamin Conn, fifteeen years old, who was accidentally shot in the left hand on July 2d while fixing an old pistol, died in Gouverneur Hospital. The wound resulted in hand on July 2d while fixing an old pistol, died in Brooklyn from tetanus July 13th. The lad on the Fourth of July shot himself in the left forefinger with a toy pistol. The wound was slight, scarcely bigger than a pinhead. A poultice was applied, and nothing was thought of it until Wednesday, when he was taken with a pain in the back. On Thursday his jaws were closed in a deathly grip, and on Friday the boy died.

PHILADELPHIA.

Dr. Stelwagon.—Dr. H. W. Stelwagon, Clinical Professor of Dermatology in Jefferson College, has sailed for Europe to attend the International Congress at Paris. From there he goes to inspect the Finsen Institute, at Copenhagen, for the treatment of grave cutaneous diseases by concentrated light rays.

Baby Farms.—Coroner Dugan is making strenuous efforts to abolish these institutions. The deaths of several infants have lately occurred, either through neglect when diseased or from starvation. The Society to Protect Children from Cruelty is aiding by taking up the cases when the authority of the Coroner cannot be further extended.

A New Healer.—A certain gentleman who affixes the title, "D.S.T." to his name is doing a rushing business with the ever-ready-to-be-humbugged people of the city. It should be stated that D.S.T. stands for "Doctor of Suggestive Therapeutics," and that the degree is supposed to come from a St. Louis school. As no drugs are administered and no surgery attempted, the "Doctor" seems to be free from interference by law.

Water Pollution.—The Supreme Court of the State has handed down an important decision relating to the rights of water companies and the pollution of streams. A water company is an individual and can obtain only a civil remedy against a person polluting its water-supply. The defendant in the case was ordered by the Secretary of the State Board of Health to abate the nuisance, but it was held that the Board must take action before the Secretary could enforce the order.

Health Report.—Deaths in the city for the week ending July 14th were 633, an increase of 89 over those of last week and of 151 over those of the corresponding week of last year. Cholera infantum was given as the cause of 96 deaths, marasmus 38, and sunstroke 33. Contagious diseases: Diphtheria 56 cases, 17 deaths; scarlet fever, 33 cases, 3 deaths; typhoid fever, 27 cases, 11 deaths; cerebrospinal fever, 1 case.

Local Longevity.—An interesting report has been published showing the deaths of aged persons in this city during the first six months of the present year. There were 493 who had lived to or beyond the age of 80 years. Of this number 206 were men and 287 were women. Of those reaching 90 years there were 31; 91 years, 11; 92 years, 6; 93 years, 7; 94 years, 5; 95 years, 6; 96 years, 7; 97 years, 1; 98 years, 2, and 106 years, 1.

CHICAGO.

Blind Children.—According to the school census statistics, there are in Chicago 160 boys and 137 girls who are blind, making a total of 297. The requirements of these children are to be met by a school on each side of the city, to be opened in September.

Impure Ice.—Vigorous action is being taken by the Health Department against those dealers in ice who have as yet failed to procure licenses. It is by means of the licenses that the department is able to keep tab on the dealers, and regulate the manufacture and sale of the frozen product. An investigation of the record of the City Collector's office showed that there were only about two-thirds of the reputed number of ice-dealers in Chicago who have thus far procured licenses. It is the intention of the Health Department to make a thorough canvas of the city, by its inspectors, and all the delinquent icemen will be arrested and taken into court.

Formaldehyde in Milk.—Prosecution of milk dealers who sell impure products was begun by the Health Department on the 16th of July. The charge against them is that they use formaldehyde in the milk, thus imposing on their customers, who believe they are buying pure milk. The dealers say that it is impossible for chemists to discover the formaldehyde in milk by chemical

analysis, and therefore say that the prosecutions of the Health Department will fall flat. However, the officials are confident, and say that they will cause the arrest of some of the offenders.

Home for Epileptics.—The Social Turnverein gave a benefit concert for the Illinois Home for Epileptics, which increased the available funds to $650. The home is to be built on a site already acquired in Evergreen Park. Dr. William Held will have charge of the institution. The new home will be erected at a cost of $5000, to be raised by subscription and entertainments.

Disposal of Garbage.—When the City Council made up the appropriation bill last March, it set apart nearly $1,200,000 to be used for street repairs and sprinkling, and for the removal and disposal of garbage. About half that amount has been expended; nevertheless, regard for public decency and the public health demands that the daily garbage output of a great city like this be not allowed to remain in streets and alleys to breed disease. If the city neglects its duty, not many private citizens will pay for having that work done which the municipal authorities should look after, and the condition of Chicago will be filthy and unwholesome beyond description.

Vital Statistics.—Eight deaths from sunstroke are reported in the bulletin of the Health Department for the week ended July 7, "although doubtless this number will be swelled by the fatal termination of cases still under treatment." The bulletin contrasts this figure with those of previous years during the decade of 1890-99. Two years—1890 and 1896—had sunstroke fatalities largely in excess of the average. In 1890 there were 152 deaths from this cause, 119 of which were in the month of June, with a maximum temperature of 92 degrees and humidity 17 per cent. less than normal. In 1896 there were 183 sunstroke deaths, 172 occurring in the month of August, and 148 of these in a single week, that ending August 15th. The maximum temperature of this period was 98 degrees, and the humidity was 15.3 per cent. in excess of the normal. Mortality from all causes during the week was slightly increased by the heat—36 more than the preceding week, and 4 more than the corresponding week of last year. The aftermath of the hot weather and the Fourth of July is yet to be computed. The total number of contagious diseases reported is 98. Of these 43 were scarlet fever, 49 diphtheria, and 6 measles. There were 52 disinfections performed, and 13 funerals inspected.

GENERAL.

"Divine Healer" Guilty.—Francis Truth, who advertised himself as a divine healer, appeared in the United States Circuit Court at Boston, Mass., July 10th, retracted his previous plea of not guilty, and was fined $2500, which he paid.

Pure Water for St. Louis.—Chicago promoters have engineered a thirty-million dollar deal that is likely to insure a permanent pure water supply to St. Louis. According to the plans, the Meramec Springs, about seventy miles from St. Louis, at the base of the Ozark range of mountains, are to be tapped and their water piped to the Missouri metropolis.

Antitoxin Cures Lockjaw.—Richard Manion, Jr., twelve years old, who lives in Hartford, Conn., has been cured of lockjaw by tetanus antitoxin. While playing in the street early in June he fell, and his hand was cut by a sharp stone. Complications set in, and lockjaw developed. The boy was taken to the Hartford Hospital on June 13th. Little hope of his recovery was entertained. The injured portion of the boy's hand was cut out to remove the breeding-place of the germs. Some opiates were given, but the principal reliance was placed upon the tetanus antitoxin.

Hospital Ships in Chinese Waters.—The "Solace," which since the Spanish War has been used as a transport, has been reconverted by order of Rear Admiral Remey into a hospital ship and detailed to carry sick and wounded American soldiers and sailors from China to the hospitals in Japan. The "Relief" has also been ordered from Manila to China. The "Maine" left Plymouth, England, last week for Chinese waters.

American Nurses in Paris.—There has been established in Paris a Bureau of American Trained Nurses, the list consisting chiefly of graduates from the Presbyterian and St. Luke's Hospital of New York. It is under the direction of Mrs. W. H. Booth, 102 Rue Vaugirard, Paris, France. This will render is possible to secure good nurses for Americans on the "other side."

Death-Rate in London.—The coming of hot weather is not welcomed by Londoners (the thermometer has registered over 90° F. this week), and a general exodus is beginning. It is feared that another spell like that of last year is impending. Until the beginning of this week London's death-rate, thanks to the cool weather, was the lowest in seven years—only 13.5 in 1000.

Medical Requirements in New Jersey.—At a regular meeting of the State Board of Medical Examiners, held at Newark, N. J., July 5th, 1900, resolutions were passed to the effect that the Board will endorse the licenses of any State Board of Medical Examiners in the United States, in lieu of an examination, provided, (1) that the candidate for endorsement shall present satisfactory evidence of having the academic and medical education required by this Board, and (2) that the license presented for endorsement shall have been issued after a State examination of the same grade and kind as that required by this Board. All enquiries should be addressed to E. L. B. Godfrey, M.D., Secretary, Camden, N. J.

Shock Restores Senses.—After being deaf and dumb for almost fifty-nine years, D. W. Tieman of Pittsburg, Pa., fell from a ladder, and the shock restored his senses of speech and hearing. When ten years old smallpox caused his affliction. He learned the deaf and dumb alphabet and afterward conversed in the sign language. He vainly tried many methods of cure, and finally became resigned. While on a ladder recently he lost his balance and fell twenty feet. He was made unconscious. While being carried to a hospital he surprised a member of his family by asking, "Say, where are you taking me?" He now talks incessantly.

Cholera in India.—The Governor of Bombay telegraphs to the Secretary of State for India that there were 9928 cases of cholera in the famine districts during the week ending July 7th, of which 6474 were fatal, and that in the native States there were 9526 cases, of which 5892 were fatal. The total number of deaths on the relief works was 5870, which was 3.9 per 1000. The rains have begun and crops are being planted. Notwithstanding the improved prospects no diminution of relief is possible. The condition of the surviving cattle in Western India is deplorable. The health returns from the Central Provinces are satisfactory. The total number of people on relief was 6,148,000.

The South African Scandal.—The abuses complained of by Burdett-Coutts in the hospital management of the British Army finds American confirmation in the report of Mr. J. J. Van Alen, who, it will be remembered, went out to South Africa with an improved ambulance as a contribution to the British equipment. Mr. Van Alen is reported to have said: "The charges are substantially true. Many men in Roberts' army died from typhoid fever for lack of beds and waterproof sheets. Two marquees and a few bell tents near Bloemfontein contained 496 patients, of whom three hundred were prostrate with typhoid fever. There were only seventeen orderlies to attend to the sick. This inattention was due principally to the sudden and unexpected amount of sickness at the front. The hospital service was thus caught unprepared." Mr. Van Alen left South Africa on June 6th last.

Typhoid at Cape Nome.—Measles and smallpox have been prevalent at Cape Nome for several months, and now advices from official sources represent Cape Nome as threatened with an epidemic of typhoid fever. The disease has already begun to manifest its presence, and local conditions are such that there seems to be no ground for hope of heading it off before it assumes epidemic form. With 30,000 persons grouped upon a narrow strip of land, part of it dug up and the habitable part of the rest covered with tents; with only one highway of any sort, with a background of marsh land; with the supplies for all this multitude scattered here and there, and exposed to damage or piled up so high that the right foods and medicines are often inaccessible; with no sanitary policing worth speaking of; with no drainage system, and with a water-supply so conditioned as to render it particularly liable to infection, the wonder would be rather if the temporary community escaped a scourge than if it suffered such a one as now menaces it. At last accounts martial law had been declared with the hope of bringing some order out of the existing chaos.

Malaria in West Africa.—The council of the Royal Society has received a report from Dr. Stephens and Dr. Christophers, the medical men of the Malaria Commission now investigating in Sierra Leone. It deals fully with the distribution of the noxious mosquito Anopheles in Sierra Leone, and says the principle underlying all attempts at extermination should be, in cities and colonies, essentially that of drainage. Every effort should be directed to the prevention of small collections of "standing water." Special emphasis is laid on the well-ascertained fact that native dwellings are the most fertile sources of infected Anopheles. As to surmises how malaria can be contracted in districts rarely visited by man, the report states that such conditions are rarely fulfilled. Observations show that in the vast majority of cases where men are supposed to have contracted malaria in uninhabited swamps, they have in reality become infected in houses, camps, or native villages where fever already existed.—[*New York Evening Post.*]

The Plague.—There is no abatement in the advance of the plague. New cases are being constantly reported from Rio de Janeiro as well as most of the other infected ports. Seven cases have been reported at Smyrna and the diagnosis confirmed bacteriologically. The infection, from the different nationalities of the patients, is evidently pretty widespread. The first two patients are Israelites, the two following Mohammedans, the fifth a Greek, and the two last Armenians. The most recent information from Oporto is that only one case has been discovered there since its reappearance. We are warned that such reports must be received with caution. At San Francisco on July 4th a Chinaman who had been complaining of illness for a week was sent to the County Hospital with symptoms of plague. Cultures made from fluid aspirated from the patient revealed the presence of the plague bacillus. A guinea-pig inoculated with this fluid died sixty hours after the inoculation. The man died July 6th, and autopsy confirmed the diagnosis. This is the first case in San Francisco in which the diagnosis was made before death. It is to be hoped that such positive evidence as this case supplies will arouse the inhabitants and the courts to a proper support of the health authorities in time to prevent any alarming recrudescence of the disease. Such periods of abeyance as has existed since the early cases are characteristic of invasions of the plague.

OBITUARY.

PROFESSOR KUHNE.

With the death of Professor W. Kühne, which occurred in Heidelberg on June 10th, the scientific world lost its greatest physiologist of late years and the University of Heidelberg was deprived of the services of a member of an illustrious group—Bunsen, Victor Meyer, Erb, Czerny, Kuno Fischer—that has made this little city a loadstone for scientific investigators of every land. Kühne's contributions to physiology show that he was possessed of a breadth of intellect and degree of originality that was unusual even among the scientists of the Old World. His achievements are all the more noteworthy because they were accomplished—many of them—in his earlier years when methods of investigation were crude as compared with present-day facilities; when an investigator had very little to guide him in the way of precedent; when he had to devise methods as well as conduct research.

Kühne was born in Hamburg November 19, 1837. His scientific education was most complete; he studied at Göttingen, Jena, Berlin, Paris and Vienna and after receiving his degree was assistant to Claude Bernard in Paris for several years. His first academic position in Germany was that of assistant to Virchow at the University of Berlin. The originality of his research work at the latter institution soon attracted attention in scientific circles and he was called to fill the Chair of Physiology and become Director of the Physiological Institute in Amsterdam. No higher tribute could have been paid Kühne than the offer he received from the University of Heidelberg to fill the position vacated by the distinguished savant Helmholtz, who had been called to Berlin. Kühne came to Heidelberg in 1871 and within three years from that date had organized and equipped one of the finest physiologic laboratories in the world. Kühne's enthusiasm for his work was intense; this in a measure explains the magnificent successes which kept the physiologic department of the University of Heidelberg ever foremost in the attention of scientists everywhere. His work and discoveries covered a wide field. He was probably the first to observe the automatic movements of protoplasm as studied in the ameba and protozoa. This work had the effect of revolutionizing many of the accepted teachings of physiology; it is certainly one of the most important facts ever developed. Kühne was also the first to observe and prove the "self-irritability" of muscle.

His fame was in the ascendency and reached its acme when he announced his famous discovery of the nerve-endings in muscle, which discovery was the first of a series of researches which he subsequently conducted and which yielded the greater part of our present day knowledge of the relations existing between nerve and muscles. He proved, furthermore, what his illustrious teacher, Claude Bernard, had intimated, *i.e.*, that curara exerts its specific influence upon the nerve-endings in muscle. Another noteworthy point concerning Kühne's career is that he was the author of the first text-book ever written on the subject of physiologic chemistry, the knowledge of which science up to that time (the early sixties) consisted of isolated facts scattered throughout medical literature. In the field of physiologic chemistry Kühne was an able and original investigator—far in advance of his time. He was the first to accurately work out the chemistry of the albumins and showed their proper diversion into albumoses, peptones, etc. This work was the foundation-stone of a branch of science which has reached enormous proportions and is of great importance in practical medicine. Kühne's inquiry into the functions of the pancreas and the chemistry of its secretion was very productive of facts and ranks with Bernard's famous work on the same subject.

Many other equally-important problems in physiology and physiologic chemistry were solved by Kühne and his pupils. Kühne was also widely known as the co-editor of the "*Zeitschrift fur Biologie*" which in connection with Prof. Karl Voigt of Munich he maintained as one of the highest exponents of scientific literature.

In person Professor Kühne was tall and portly, with a commanding presence, a magnificent large head and bright eyes. His personality was a strong one. He was universally liked for his personal qualities and—even in the highest scientific circles—esteemed for his unusual attainments.

Albert C. Barnes, M.D.

Heidelberg, June 18.

SELECTION.

THE EPIDEMIC OF ENTERIC FEVER AT BLOEMFONTEIN.[1]

By A. Conan Doyle, M.D.

To the Editor of the British Medical Journal:

Dear Sir: You were good enough to suggest when I left England that I should send you some notes upon any points which might strike me. The pressure of work has prevented me from complying with your request, and even now I feel that you will find these comments of a very scrappy character.

When the nation sums up its debt of gratitude to the men who have spent themselves in this war I fear that they will almost certainly ignore those who have done the hardest and the most essential work. There are three classes, as it seems to me, who have put in more solid and unremitting toil than any others. They are the commissariat, the railway men, and the medical orderlies. Of the three, the first two are the most essential, since the war cannot proceed without food and without railways. But the third is the most laborious, and infinitely the most dangerous.

[1] From the British Medical Jour., July 7, 1900.

The outbreak of enteric among the troops in South Africa was a calamity the magnitude of which had not been foreseen, and which even now is imperfectly appreciated. We naturally did not dwell too much upon it while the war was in progress. But it was appalling in its severity, both in quantity and quality. I know of no instance of such an epidemic in modern warfare. I have not had access to any official figures, but I believe that in one month there were from 10,000 to 12,000 men down with this, the most debilitating and lingering of continued fevers. I know that in one month 600 men were laid in the Bloemfontein Cemetery. A single day in this one town saw 40 deaths. These facts would have stiffened the resistance at Pretoria if they had been generally known. It is only now, when the worst is past, that they can be talked of.

How was this unforeseen and unprecedented crisis grappled with? Entirely by the efforts of the medical men and by the devotion of the orderlies. When a department is confronted by a task which demands four times more men than it has, the only way of meeting it is for each man to work four times as hard. This is exactly what occurred, and the crisis was met. In some of the general hospitals orderlies were on duty for thirty-six hours in forty-eight, and what their duties were—how sordid and obscene—let those who have been through such an epidemic tell.

He is not a picturesque figure, the orderly, as we know him. We have not the trim, well-nourished army man, but we have recruited from the St. John Ambulance men, who are drawn, in this particular instance, from the mill hands of a Northern town. They were not very strong to start with, and the poor fellows are ghastly now. There is none of the dash and glory of war about the sallow, tired men in the dingy khaki suits—which, for the sake of the public health, we will hope may never see England again. And yet they are patriots, these men; for many of them have accepted a smaller wage in order to take on these arduous duties, and they are facing danger for twelve hours of the twenty-four, just as real and much more repulsive than the scout who rides up to the strange kopje or the gunner who stands to his gun with a pom-pom quacking at him from the hill.

Let our statistics speak for themselves; and we make no claim to be more long-suffering than our neighbors. We have 3 on the staff (Mr. Gibbs, Mr. Scharlieb, and myself). Four started, but one left us early in the proceedings. We have had 6 nurses, 5 dressers, 1 wardmaster, 1 washerman, and 18 orderlies, or 31 in all, who actually came in contact with the sick. Out of the 6 nurses, 1 has died and 3 others have had enteric. Of the 5 dressers, 2 have had severe enteric. The wardmaster has spent a fortnight in bed with veld sores. The washerman has enteric. Of the 18 orderlies, 1 is dead, and 8 others are down with enteric. So that out of a total of 34 we have 17 casualties—50 per cent.—in nine weeks. Two are dead, and the rest incapacitated for the campaign, since a man whose heart has been cooked by a temperature over 103° is not likely to do hard work for another three months. If the war lasts nine more weeks it will be interesting to see how many are left of the original personnel. When the scouts and the Lancers and the other picturesque people ride in procession through London, have a thought for the sallow orderly, who has also given of his best for his country. He is not a fancy man—you do not find them in enteric wards—but for solid work and quiet courage you will not beat him in all that gallant army.

There is one mistake which we have made, and it is one which will not, I think, be repeated in any subsequent campaign. Inoculation for enteric was not made compulsory. If it had been so I believe that we should (and, what is more important, the army would) have escaped from most of its troubles. No doubt the matter will be fully threshed out in statistics, but our strong impression, from our own experience, is that although it is by no means an absolute preventive, it certainly modifies the course of the disease very materially. We have had no death yet (*absit omen*) from among the inoculated, and more than once we have diagnosed the inoculation from the temperature chart before being informed of it. Of our own personnel only one inoculated man has had it, and his case was certainly modified very favorably by the inoculation.

Of the courage and patience of the soldiers in hospital it is impossible to speak too highly. We have had 500 cases pass through our hands, and can speak now from a fairly large experience. I had always imagined that in every large army there must be a minority of skulkers and shirkers, but they are singularly absent in the South African field force. I have not had more than two or three cases in my wards which bore a suspicion of malingering, and my colleagues say the same. They are uniformly patient, docile, and cheerful, with an inextinguishable hope of "getting to Pretoria." There is a gallantry even about their delirium, for their delusion continually is that they have won the Victoria Cross. One patient, whom I found the other day rummaging under his pillow, informed me that he was looking for "his two Victoria Crosses." Very touching also is their care of each other. The bond which unites two soldier pals is one of the most sacred kind. One man shot in three places was being carried into Mr. Gibbs' ward. I lent an arm to his friend, shot through the leg, who limped behind him. "I want to be next Jim, 'cos I'm lookin' after him," said he. That he needed looking after himself seemed never to have occurred to him.

I do not think that any men have ever expended money better than those who fitted out the private hospitals. The officers of the Army Medical Department freely admit that they do not know what they would have done without their aid. They arrived out here at the very moment when the sickness was becoming alarming, and they took their share of the strain when the epidemic

was at its height. The large general hospitals found it difficult to get to work on account of the pressure on the line which prevented them from getting up their bulky equipment, but the private hospitals, more compact and mobile, got to work almost at once after their arrival. The pressure was severe. Our own hospital, with equipment and personnel for 100 cases, had 150 cases, most of them virulent Paardeburg enterics, shot upon them, and had to cope with them as best they might. But the men who had come out to work, and the orderlies, though untrained, never once grumbled at the great exertions which were called for. Without the Yeomanry, the Portland, the Irish, the Scotch, the Welsh, and the other hospitals fitted up by private effort, and manned by volunteers, it is difficult to see how the epidemic could have been met.

There is sure to be some adverse criticism of the Army Medical Department after the war, because they have had to meet so difficult a situation with such inadequate resources that it is impossible that there should not be particular instances where the machinery has broken down. A captious critic could quote cases of an overfilled, undermanned hospital without medical necessities in one place, or of hardships endured by the sick and wounded in another. How can it be otherwise, when a Department which is sufficient for the needs of two army corps has to provide for the wants of 200,000 men with typhoid raging among them? Taking it on the whole, the Department has been well organized and well worked, and has met an unforeseen and exceptional state of things with remarkable success.

The statistics of the campaign are likely to be vitiated by the employment of the vague and unscientific term, "simple continued fever," so largely used in the army returns. A great number of cases were classed under this head, and such terms as "veld fever," "camp fever," etc., were freely used. I think that nearly all medical men have come to the conclusion that all, or at least most, of these cases were really enteric of varying types and degrees of severity. Our senior surgeon, Mr. Gibbs, performed post-mortems on several cases which presented abnormal features, but never without finding the characteristic ulcers.

A. Conan Doyle.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, July 12, 1900.

THE ARMY HOSPITAL SCANDALS IN SOUTH AFRICA—SOLDIERS ILL WITH TYPHOID FEVER LYING ON THE GROUND IN MUD—DELIRIOUS PATIENTS WANDERING ABOUT THE CAMP—INCREASING RECOGNITION OF THE WORK OF MEDICAL WOMEN—OPPOSITION TO THE MIDWIVES' BILL—PHOTOTHERAPY AT THE LONDON HOSPITAL.

A long letter addressed to the *Times* by Mr. Burdett-Coutts, M.P., who has recently returned from South Africa, indicting in a most scathing manner the medical arrangements, has fallen like a thunder-clap on the British public. As I have already informed you, nothing but praise and satisfaction had been previously expressed. In a war which in its early stages was so full of military disasters and which has led to free criticisms, official and other, of the military operations, the one branch of the service that was declared beyond criticism was the Army Medical Department. According to Mr. Burdett-Coutts there are 20,000 sick and wounded troops in South Africa and more than half of these are down with typhoid. He visited a field hospital which had accommodations for fifty patients and found 250 instead, of which ninety were suffering from typhoid fever. "Men lay with their faces covered with flies in black clusters, too weak to raise a hand to brush them off, and there was no one to do it for them. At night there were not enough orderlies to prevent delirious patients from getting up and wandering about the camp half naked in the bitter cold." The order came to evacuate the hospital. Twenty of the worst cases of typhoid fever were removed to a more permanent hospital a mile and a half off. The patients were put on rough ox-wagons and then jolted across the veldt, which was much broken by spruits and gullies. One patient was suffering from hemorrhage at the time. In another hospital hundreds of men in the worst stages of typhoid lay on the ground, some of them in three inches of mud, with only a blanket and a thin water-proof sheet (not even the latter in many cases), with no milk, and hardly any medicines, without beds, stretchers, mattresses, pillows, or linen of any kind, without a single nurse and with only a few ordinary soldiers to act as orderlies. There were none of the conditions of a forced march. It was a mile from Bloemfontein, a large town which the British had occupied six weeks, with a line of railway to two seaports, along which thousands of troops and countless trainloads of stores and equipments of all kinds for every one, except the sick, had been moving up during the whole of the leisurely halting time.

The Government's answer to these charges has been delivered in the House of Commons by Mr. Wyndham. He admitted that the sick and wounded in this campaign—as he believed in every other—had been exposed to terrible hardships. But there had been no deliberate case of stinting; the Treasury had lavishly given even to the extent of generosity. There were now employed in South Africa 446 army medical doctors, 348 civil doctors, 7 consultants, and 52 doctors were available in civilian hospitals. There were 12 general hospitals, 5 stationary, 31 field, and 10 special (organized by civilians), which provided a total of 18,840 beds. Down to the most recent period there was an excess of beds: 10 per cent. bed accommodation was provided for the whole force. The case mortality of typhoid fever was 21 per cent., which compared

favorably with that of other campaigns. In the Nile campaign of 1898 it was 28; in the Dongola campaign of 1896, 50; in the Matabele War of 1896-7, 32; in the Chitral campaign of 1895, 28; and in the Soudan campaign of 1884-5, 39. Even in times of peace in the military hospitals it was 20.4. Hon. Mr. Burdett-Coutts' revelations led to a request of the Government for information from Lord Roberts. The Commander-in-Chief points out in his reply that a very large number of sick had to be provided for, and that the very existence of his large force depended on supplies coming on a line of rail 900 miles long, every bridge of which for the last 128 miles had been destroyed. He suggests that the Government should appoint a commission to inquire into the medical arrangements.

The result of the whole affair has left a very painful impression on the public, for no attempt has been made to answer Mr. Burdett-Coutts' exceedingly definite charges. The defence has merely consisted in insisting on the difficulties of the campaign, and on the statements of the distinguished civilian consultants who went to South Africa that the arrangements were admirable, and on the absence of complaints from all the numerous war correspondents. On this last point Mr. Burdett-Coutts very reasonably says that the lot of any correspondent who sent such news would not be enviable. So the question rests for the present.

The increasing public recognition of the work of qualified medical women is strongly evidenced in the last report of the London School of Medicine for Women. The number of students now in attendance is 197. Since January, 1899, 20 have qualified, 5 of whom will take up missionary work. Twenty-eight former students of the school have been appointed during the past year to posts in various hospitals and infirmaries in London and the provinces. Further, the board of the Royal Free Hospital has unanimously decided to appoint two qualified medical women as resident medical officers.

The opponents of the Midwives' Bill have scored a success: they have "talked it out" in the House of Commons, which means that the only time available for passing the third reading in the present session has been wasted in discussion. The gentlemen who led the opposition retailed a number of silly irrelevant arguments, such as: that the bill was contrary to the tendency of recent legislation, which was to insist upon a higher medical standard, and that in almost every case abnormal symptoms might arise so that it was necessary that somebody should be present who was qualified not only in midwifery but also in medicine and surgery. How this gentleman proposes to provide the "somebody qualified" for more than half the labors which take place in this country and are attended by midwives, he did not condescend to say; nor did he mention what are the advantages of women being attended by ignorant and untrained, instead of properly trained midwives. However, the promoters of the bill are sparing no effort. A memorial in its favor has been presented to Mr. Balfour, signed by a large number of medical men engaged in the practice of obstetrics, including the President of the Royal College of Physicians, Sir W. Wilks; Sir W. Broadbent, Sir John Williams, Dr. Playfair, and Mr. Jonathan Hutchinson. It is also signed by 100 medical officers of health, 137 coroners and some well-known clergy and representatives of several women's political institutions.

A "Light Department" has been installed at the London Hospital for the treatment of lupus and other skin diseases according to the method of Prof. Finsen of Copenhagen. The principle of the method depends on the fact that the chemical rays of the spectrum are bactericidal and can penetrate the skin. They must be concentrated on the skin, which is rendered possible by excluding the burning (ultra-red) rays. A hollow plano-convex lens containing a blue solution of sulphate of copper is used. The solution absorbs the caloric and red rays. Further cooling is effected by another hollow plano-convex lens through which water constantly circulates. The rays are focused on the skin by the former and pass through the latter, which is placed in contact with the skin and exerts pressure on the area to be treated, thus rendering it anemic, which facilitates penetration of the chemical rays. If sunlight is not available an electric lamp of 50 to 80 amperes is used. The whole installation has cost £500; the apparatus was presented to the hospital by the Princess of Wales. The patients while under treatment recline on light, movable couches or sit in rocking-chairs, which can be tilted to any angle. A nurse, sitting on a high stool, presses the cooling lens on the area to be treated. Her hands and the lens are carefully sterilized after each sitting. The results cannot yet be stated.

OUR PARIS LETTER.

[From Our Special Correspondent.]

PARIS, July 11, 1900.

THE POZZI-DEVILLERS DUEL—RHYTHMIC COMPRESSION OF THE HEART AS A MEANS OF SAVING LIFE.

SOME facts about the Pozzi-Devillers duel have already been published, but it may be interesting to recount some of the minor details. The trouble originated in the following manner: Dr. Pozzi, as curator, was obliged to attend the meetings of the Senate during the progress of the Déroulède trial, though personally he would gladly have had nothing to do with the matter. Déroulède was condemned to banishment, and, of course, all nationalists were bitterly incensed against the Senate. At a recent social gathering at the Club Médical in the Avenue de l'Opéra, Dr. Devillers, Déroulède's physician, upbraided Dr. Pozzi for his conduct toward his client, and

Pozzi put him off by saying that a medical club was not a fit place for discussing politics. Dr. Devillers thereupon threw his glove in Dr. Pozzi's face, and, on the latter saying that the man could not be held accountable for his actions, broke forth into most violent language. A duel was decided on and Pozzi was wounded in the right hand immediately after the swords were crossed. The two opponents shook hands and the general opinion was that the *affaire* was safely ended. It seems, however, that a legal prosecution will be instituted by the Government against Dr. Devillers for assault of a magistrate, and Dr. Doleris told me yesterday that he would be obliged to see the juge d'instruction to-day, as he is one of the witnesses, being the secretary of the medical club. Dr. Pozzi would have preferred that no attention be paid to Devillers' actions.

The plague has caused some anxiety in Paris, but as the weeks go by everything is going off so smoothly and the Exposition is proving such a success that the plague is no longer discussed. At Marseilles a premium of five centimes for every rat killed or given up alive and half that sum for every mouse will be paid on delivery at the municipal office at Marseilles. The population of Marseilles does not consider rat-catching a lucrative employment, as so far in two weeks' time only 686 rats and some 200 mice had been disposed of.

At a recent meeting of the Academy of Sciences, a most interesting paper on the use of rhythmic compression of the heart in cases of prolonged syncope was read by Drs. Tuffier and Hannion. Dr. Battelli had already studied this means of bringing dogs back to life when the action of the heart had been stopped by electrisation, suffocation or chloroformization. In carrying out these experiments, Dr. Battelli made a sort of flap in the chest, seized the heart and determined a rhythmic compression of the ventricles. The dogs were brought to life for a space of time which, however, never exceeded twenty-two hours. In 1898 Dr. Tuffier carried out similar experiments, bringing back to life definitely two dogs in which complete syncope had been produced by chloroformization. This treatment was carried out four days after the operation on a man suffering from appendicitis. The heart having stopped beating, artificial respiration and rhythmic tractions of the tongue were tried in vain. As Dr. Tuffier obtained no result, he opened the third intercostal space and after separating the pericardium compressed the ventricles sixty to eighty times. The arterial pulsation then became perceptible, the patient opened his eyes, moved his head, looked around him, recognized his physician: after two or three minutes the pulse grew feebler, then stopped. New contractions were induced, but the result was of short duration, and the third time no change was perceptible. On performing the autopsy a clot was found in the left branch of the pulmonary artery. Dr. Tuffier added that it would be interesting to know how long this treatment might be applied with some fair show of success, and when one should abandon all hope of producing a result.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

SEVERE CYSTITIS—EMBOLISM OF THE SIGMOID SINUS—BACTERIOLOGY OF SCARLATINA—ANGINA AND PURPURA RHEUMATICA—HEART IN SYPHILIS—ANKYLOSIS OF THE VERTEBRAL COLUMN.

Hillmann, at the meeting of the Medical and Natural Science Society at Jena, held February 22d, reported a case of severe cystitis due to a foreign body which had found its way from the adjoining parts into the bladder. In addition to the anatomical arrangement in women which by a short urethra and its relation to the vagina facilitates the mechanical carrying of infected matter, the author points out that neighboring pathological conditions may also be the cause of cystitis, such as cyst sacks, dermoid cysts, ecchinococcus foci. Further, purulent masses may rupture into the cavity of the bladder and by carrying detritus and germs into it set up slight or grave infection of the mucosa. Gonorrhea is a potent cause. In the case reported a bad catarrh was characterized by the repeated discharge of concretions in the centers of which were always little bits of thread. Since the patient had had a double pyosalpinx operated on by the vaginal route some time previously, it was assumed that a suture line was the cause. Exploration of the vagina through the old scar showed nothing, but after stretching and splitting the urethra a piece of gauze was removed which was probably a packing left after the first operation. Prompt full recovery followed.

Meier, at the Medical Society of Magdeburg, April 5th, related the history of a case of an embolism in the sigmoid sinus. While rare it has been the cause of death, as reported by Kuhn and as in the author's own experience. During an operation for an otitis and an abscess about this sinus, a bone splinter broke into the channel and air rushed in with a hissing noise. Cyanosis, cardiac and respiratory arrest and collapse followed. Traction on the tongue, artificial respiration and cardiac stimulation finally revived the patient. At present he never attempts to operate on these cases without cutting off the blood-current by gauze packing between the bone and the sinus. In three subsequent cases this had succeeded.

Kretschmann in the discussion pointed out that a freely-exposed field rarely results in infection of the meninges. Whether an infected thrombus of one of the large venous sinuses lies always at the bottom of a sickness with the picture of pyemia is a difficult question to decide, but one which is worthy of research. When the cranium is widely laid open the symptom of slow pulse in case of abscess of the brain loses its

force because the pressure finds relief in the removal of the bony vault.

The entrance of air into the sinus probably happens often without damage because the quantity is not great.

MEIER disagreed with Kretschmann, stating that slowness and irregularities in pulse are valuable guides to intracranial abscess. When pus within the brain is suspected approach to it is usually best along the line of its own progress; hence, he prefers to start from the petrous portion of the temporal bone. Whether a purulent thrombosis is always at the bottom of a pyemic picture he doubts, but stated that it occurs so often as to render exploration of the sinus justifiable. An abscess about the sinus might well set up such a picture and then its evacuation would cure; it is better to incise the channel-wall than remain in doubt and lose the patient.

A. BAGINSKY at the Berlin Medical Society, June 13th, reviewed the history of the bacteriology of scarlatina, from which he claimed that various authors had with more or less regularity and with more or less etiological significance found the streptococcus in scarlatina, either in the throat or in the internal organs. In 362 cases the speaker had always found it and in 42 autopsies had not the least difficulty in demonstrating it in the blood, other body fluids and viscera. During life he had found it in the cerebrospinal fluid of a patient in whom secondary infection was out of the question. The effect of these streptococci on animals was various. With serum from convalescents no agglutination tests were successful. Under no circumstances did he wish to claim that these streptococci are the exciters of the scarlet fever, but he did wish to point out that they were a constant factor even in cases in which secondary infection could not be claimed. HEUBNER during the discussion pointed out that the author had advanced nothing new, but had furnished the interesting fact that the streptococcus was found in all his cases. In his own clinic he had been able to find it in about 200 consecutive examinations. He himself could see no causal relation between this germ and scarlet fever. He begged to note that the speaker had done as most other authors and classed scarlatina among the toxic states. With this he could not agree.

SLAWYK reported that the only cases out of about 200 in which he failed to find streptococci were the very brief twenty-four- to forty-eight-hour cases, numbering perhaps a dozen.

WASSERMANN said the cause of all exanthems is still in the dark and referred to the exhaustive researches of Loeffler in mouth- and hoof-distemper among cattle in which the bacteria were found to be very much smaller than any known and almost on the borders of uncertainty of recognition. In the same way the germ causing peripneumonia in cattle is not distinguishable, yet Nocard has infected healthy animals with the disease by filling collodium capsules with the serum and sewing them beneath the skin.

A. BRUCK referred to the discussion at a previous session as to the relation between angina and rheumatic arthritis and angina and endocarditis, and went on to narrate several clinical histories showing a similar apparent dependence between angina and purpura rheumatica.

VON LEYDEN at the session of the Berlin Society for Internal Medicine, June 11th, exhibited the heart of a twenty-eight-year-old male who during the last two months of life had complained of cardiac pain and suddenly fallen dead. On section were found hypertrophy of both ventricles, fibrous myocarditis, peri-arteritis, thrombosis of minute cardiac vessels, aneurysma cordis, but no lesion of the coronary arteries. In spite of the negative history the author considered lues at the back of it, especially in the light of another case in which lues had produced advanced myocarditis in a young man.

LITTEN reported advanced high-grade endocarditis at autopsy following influenza during the last epidemic.

A. FRAENKEL repeated the dependence between syphilis and aneurism of the large vessels and in contrast to the speaker could not see why syphilis should affect the small vessels of the heart only. First it works a change in the vessel-walls, diminishes elasticity and finally leads to the giving way under the blood-pressure.

LEYDEN stated in reply that syphilis changes the small vessel-walls so that thrombosis occurs and thereafter heart-changes follow. He could not understand, however, why syphilis causes dilatation without previous ulceration.

GLASER demonstrated a total ankylosis of the vertebral column in a patient dead of hemoptysis, with deformity of the articulations of the jaw, of the knee with firm stiffening, and of the hips to a slight, not positive degree. The case did not appear to belong either to the type of Pierre Marie-Struempell or to that of Bechterew.

FRAENKEL expressed the conviction that this case was purely one of severe local invasion of a general arthritis deformans.

SOCIETY PROCEEDINGS.

AMERICAN PROCTOLOGICAL SOCIETY.

Second Annual Meeting, Held at Washington, D. C., May 2-3, 1900.

President's Address.—Dr. Joseph M. Mathews, Louisville: The bane of specialism to-day is the "blooming out" of a class of men to practise specialties who have no practical knowledge of the same. Such action should receive the strongest censure from the entire profession. I take it that the object of this assembling together is mainly to encourage the better understanding of the diseases of the rectum by the reading of papers and the free discussion of the same. If you will per-

mit me, I would suggest that the membership be made up of those who desire a better knowledge of proctological subjects, whether he be a general or special surgeon, a gynecologist or obstetrician. Indeed it is by the diffusion of such knowledge in a general way that the profession is to profit. Considered from a special standpoint it might be well to try and demonstrate that it is just as difficult to excise a rectum as it is to remove an ovary; that it requires as much surgical knowledge to anastomose the colon around a stricture as it does to sew up a lacerated perineum; to do a colopexia as to remove a fibroid tumor; or to do a colostomy properly as to do a trachelorrhaphy.

Excision of the Rectum Through the Vagina.—Dr. S. T. Earle, Jr., Baltimore: The case was one of adenocarcinoma; there were about five inches of the rectum removed, the centrifugal end of the rectum was drawn down, and stitched to the anal margin, the vaginal and perineal incision was closed and united by first intention. The results were most satisfactory, and the patient has fair control of her evacuations.

Unique Cases of Rectal Surgery.—Dr. Samuel G. Gant, New York: (1) Congenital Absence of the Coccyx and Lower Sacral Vertebra. This case was referred to Dr. Gant to be treated for anal fissure. He was thirty-five years old and a very strong man. Examination revealed the absence of the coccyx and lower sacral vertebra which made the broad end of the bone stand out and easily noticeable through the skin because of the fact that the tissues below it were drooped inward, making a concavity large enough to hold a goose egg. He had been that way since birth, but had suffered no inconvenience from it, having perfect control over his bladder and anus. The fissure was relieved by divulsing the sphincter, incising the rent, and stimulating it thereafter with a mild silver solution. (2) Stricture of Rectum in a Little Girl Eleven Months Old Caused by Swallowing an Open Safety-Pin. This case is of unusual interest because of the child's age. At the time the pin was swallowed it caused considerable pain and suffocation. It was passed embedded in a mass of fecal matter just one month later. Several days preceding this she suffered great agony and passed frequent bloody stools. From this time on the child continued to have bowel trouble, suffering from constipation, occasional diarrhea, and the discharge of pus, blood and mucus with the stools. Digital examination revealed a tight stricture three inches above the anus which appeared to be the result of inflammatory action and adhesions. It was easily dilated with first one and then two fingers. The ulceration was curetted, the rectum irrigated, and the little patient sent home. After-treatment consisted of stimulating applications and occasional divulsion with the finger. This little patient was discharged cured in eight weeks. (3) Closure of Artificial Anus of More Than Three Years' Duration. A left inguinal colostomy was made in the case of a young woman, eighteen years of age, suffering from tubercular ulceration which would not succumb to less radical means. As a result of treatment, local and general, she fully recovered in a year, having in the meantime supported herself as a waitress. She desired the opening closed but was advised to wait. Three years from the time the operation was made she became engaged to be married and insisted upon the closing of the opening in the side. Thorough examination demonstrated that the ulceration had healed and further that there was no constriction of the bowel. A No. 10 Wales bougie passed through the anus and out at the anal aperture in the groin. The opening was included in two eliptical incisions which were carried inward until the bowel was separated from the parietes. Because of the spur both legs of the original loop were firmly adherent and required resection. A purse-string suture was thrown around each, a Murphy button inserted and locked, and the gut dropped into the abdominal cavity. Peritoneum, muscles and skin were united with catgut. Primary union resulted, the button passed on the tenth day, and the patient left the hospital at the end of three weeks. This patient made a complete recovery. She was under observation for two years after the closure and her bowels moved naturally during this time.

Submucous Ligature for Hemorrhoids.—Dr. B. Merrill Ricketts of Cincinnati: A large needle is made to describe more than a semicircle, carrying a moderate-sized kangaroo-tendon submucously around the varices which occupy the rectum as much as three inches above the mucocutaneous border. The three hemorrhoidal vessels, arterial and venous, enter the rectum and perforate the rectal muscular tissue about three and a half inches above the sphincter ani. Great difficulty has been experienced in passing the needle to complete the entire circle submucously. To overcome this the needle is brought out at a point corresponding to one-half of the circle, again to enter at its point of exit and then to pass out at the point of primary entrance. In cases of but one or two hemorrhoids one ligature of this character is sufficient. If there are many hemorrhoids occupying the entire circumference of the rectum as many of these submucous ligatures may be applied as necessary. Then, too, it is not necessary to incorporate all of the varices within the ligature, because many of those which are not so constricted by the ligature will become so as a result of the trophic changes which ensue. Sometimes it will be found most convenient to introduce all of the ligatures before making them taut. By doing this the introduction of the needle is made with greater ease. Before this work is attempted the sphincter ani should be divulsed to the fullest degree with the finger. Divulsion once completed, the hemorrhoids will at once protrude, and are most easily encircled by the ligature. As soon as the ligatures are made taut the hemorrhoids are inverted into the rectum. Sometimes it is desirable to puncture some

of the larger hemorrhoids that the distention may not be so great and for the purpose of lessening the amount of hypertrophied tissue within the rectum. After a few weeks atrophy has taken place to such a degree as to allow the sphincter ani to resume its normal tonicity and to have completely destroyed all the objectionable varices which formerly existed. The advantages of this operation are: First, the impossibility of secondary hemorrhage; second, there is no tissue destroyed or sacrificed; third, the loss of time is but little, if any, greater than when they are removed by the clamp and cautery; fourth, thus far there has been no infection; fifth, there have been no fistula, abscess or fissures resulting therefrom; sixth, the pain is no greater, and less, perhaps, than in other methods of ligaturing; seventh, there is absolutely no stenosis.

Temporary Artificial Anus.—Dr. Jas. P. Tuttle, New York: Indications for temporary artificial anus: (1) Obstruction with removable cause. (2) In cases of excision of the rectum where sphincter is involved. (3) In intractable ulceration of the rectum. (4) In stricture of the rectum with large area of ulceration which does not readily yield to local treatment. (5) In neoplasms in the sigmoid and colon that cannot be found through the rectum. (6) In malformations and imperforate rectums, where the gut cannot be easily found in the perineum. (7) In chronic membranous colitis; (8) In certain forms of rectovesical, rectovaginal and rectourethral fistulas. With these numerous and clear indications, the operation is comparatively seldom recommended, because of prejudice against it and the false impression that once one has an artificial anus he must always have it. Doctors hesitate to advise it, because they know that by the older methods closure is uncertain, and more dangerous than the operation or the disease for which it is made. The operation advised is a modification of the Rectus-Maydl method. It is quick, simple, effectual. The opening is made by a T-shaped incision, in such a manner that the transverse flap falls into the distal, and effectually closes it, while the two triangular ones roll outward and curl up like a dry leaf, thus leaving free exit from proximal leg of convolution. No part of the gut is removed or destroyed. The closure is made by simply unrolling and suturing back into position these flaps, first with sutures through mucous membrane and then with Lembert sutures of chromicised catgut. After the gut is thus closed, the partial parietal peritoneum is dissected away for an inch or more all around the abdominal incision, so that the gut will drop back into the abdomen, but not into the peritoneal cavity, thus eradicating the spur. The muscular fascia and skin are then sutured over the gut with silkwormgut.

Chronic Interstitial Proctitis.—J. Rawson Pennington, Chicago: He demonstrated that the sigmoid flexure in the distended state frequently extends into and occupies the right iliac fossa; also conclusive evidence of the existence of the rectal valve and its structure. He claims that deformity of the rectal valve and hypertrophy of its muscular layers are the two principal primitive causes of obstinate constipation. He exhibited his automatic valve clip for dividing these structures when pathologic.

Demonstration of the Rectal Valves.—Dr. Thos. Chas. Martin, Cleveland: Without the use of anesthetic by means of his chair, the subject was put into a posture equivalent to the knee-chest posture, the rectum inflated and its entire length exposed to view. The rectal valves were rendered conspicuously visible and palpable to the members of the Society and the fact of their existence generally agreed upon.

New Radical Operation for Valvular Obstipation.—Dr. Thos. Chas. Martin, Cleveland: A normal valve may be effaced under pressure of the test-hook. A valve situated on the fixed posterior wall of the rectum is much more obstructive than is one situated on the anterior wall, for the reason that the descent and backward excursion of the anterior rectal wall places the feces more securely in the pocket afforded by a posterior valve. A valve situated on the anterior wall, if of the same condition and dimension as one situated on the posterior wall, is less obstructive to defecation for the reason that the backward and downward excursion of the rectal wall throws the feces out of the valve-pocket and over its free border. If the number of the valves be more than the normal three, it can be readily understood that such an addition of obstructive features increases the obstruction. For instance, four or five relatively shallow valves placed close together are more obstructive than are two somewhat deeper valves if these two valves are placed at some distance from one another. Anatomic coarctation or physiologic juxtaposition of the valves may contribute to the establishment of obstipation whether the valves be diseased or not. If two valves are so closely situated that their borders are seen to overlap, or if it is seen that on the patient's bearing down two valves then overlap, it may be assumed that these valves constitute an obstruction to defecation. A valve situated at a direct right angle to the axis of the rectum is more obstructive than one that is obliquely situated. However, an oblique valve may contribute to the establishment of an obstruction *in* a transverse valve immediately below it, for the reason that the oblique valve may deflect the fecal column directly into the pocket formed by the next lower and transversely-situated valve. (1) The resistance which any given valve affords to the test-hook; (2) propinquity of other valves to a given valve, and (3) the direction of the valves next above a given valve, together with (4) the number of valves in the rectum, and (5) the precise situation and direction of each valve, are all features which should be studied as possible component factors which contribute to the obstipation. Hypertrophy of the rectal valve due to a rectitis, local or general, is character-

ized by evident thickening of the free border of the valve. Fibrosis of the rectal valve is not characterized by an increased size of the valve, although its resistance to the hook may be as great as in the case of the hypertrophied valve. There is always noticeable in cases of valvular obstipation a very conspicuous redness of the mucous membrane which begins at the obstructing valve and extends downward toward the anus. The rectal mucosa above the obstructing valve is usually of pale color except in those cases where there is invagination of the upper gut. Dr. Martin then outlined his operation for division of the valve and detailed the precautionary measures to be employed to insure safety and secure success.

Mooted Questions in Proctology.—Dr. A. B. Cook, Nashville: He called attention to a number of the more prominent points of disagreement among proctologists. These were (1) Anatomy; the existence of the rectal valves are not yet generally admitted, when in truth they constitute the most conspicuous features of the normal rectum. (2) Physiology; many points in this connection are yet to be worked out. The mechanics of defecation is a much-disputed subject. (3) Pruritus ani: Is this a disease or merely a symptom? The etymology of the term itself offers the readiest solution of the problem. Pruritus means simply *itching* and itching can not be regarded as other than a symptom. Although sometimes difficult to locate the lesion which gives rise to it, it is practically always a macroscopic one. In searching for it the reflexes are to be borne in mind. (4) Simple ulceration; one prominent author (Mathews) states that this disease located above the sphincter muscle is a very uncommon one. Dr. Cooke's experience has been the very opposite. This difference of opinion is probably due to different conceptions of the meaning of the word. Properly considered, ulceration and ulcer are synonymous terms, and the rectal ampulla a frequent site of such disease process. (5) Benign stricture: the author called attention to the different views held as to the frequency of syphilis as a causative factor. Sixty per cent. is far too high an estimate. The rectal valves have much to do with the etiology of this disease. (6) Cancer; discussion of this disease was limited to the question of the justifiability of colostomy as a means of prolonging life and giving comfort. As compared with the hypodermic syringe, the author deems it greatly to be preferred, and, when total extirpation is impossible, strongly advises resort to this procedure.

Pruritus Ani.—Dr. L. H. Adler, Jr., Philadelphia: It is important to see that the patient has a daily evacuation of the bowels, and, if necessary, medicines are to be used for this purpose. In all cases, more or less varicosity of the hemorrhoidal vessels exists; at all events, I am in the habit of seeing the patient daily for a time, and I employ an injection of one or two-and-a-half drams into the cavity of the rectum of the following prescription: ℞ Fluid extract of hamamelis, 1 fluid-ounce; fluid-extract of ergot, 2 fluid-drams; fluid-extract of hydrastis, 2 fluid-drams; compound tincture of benzoin, 2 fluid-drams; carbolized olive or linseed oil (carbolic acid, 5 per cent.), 1 fluid-ounce. M. Sig. Shake well before using. The patient is advised prior to using this injection that a desire to have the bowels evacuate will occur as a result of its employment, but that if he will remain quiet upon the examination-table, the sensation will quickly pass away. I paint the entire surface around the anus for several inches outward with a strong solution of nitrate of silver. If any break on the continuity of the skin exists as a result of previous scratching, a little of a two-per-cent. cocaine solution applied to the abrasion, will prevent the suffering incident to the use of the silver salt. In my experience the use of a strong silver solution is not nearly so painful, under the circumstances surrounding its use in the class of cases under consideration, as the weaker solutions. As soon as the silver has dried and from the first visit and thereafter, I smear over the anus and the cutaneous surface of the parts for a distance of about two inches around the orifice, the officinal citrine ointment or unguentum hydrargyri nitratis. The ointment I use in its full strength. Over the salve I place a wad of absorbent cotton, the quantity of cotton varying with the patient's wishes and comfort. The dressing is kept in place with a T-bandage. If the itching should annoy him during the night he is directed to bathe the anus with hot water, as hot as can be borne with comfort, but under no circumstances is he to rub the parts. He is also told that the application of the hot water will momentarily increase the itching, but that he is not to scratch. After he has used the water he is directed to use either a solution of black wash, *lotio nigra*, or, what is better in some cases, calomel ointment, either of which is to be applied locally to the affected parts.

Fistula.—Dr. Geo. B. Evans, Dayton: The inefficacy of all remedial measures except the knife for curing fistula still remains unquestioned, unless by inaccurate observers. A fistula which is not due to ulceration and perforation of the rectal wall from within is the result of a previous abscess, due to an inflammation, and that the result of traumatism. I have found sometimes fistula due to caries of the lower portion of the sacrum and the coccyx. I believe it to be as safe to operate on phthisical patients as upon others. During the past ten years there have been over six hundred phthisical patients admitted to St. Elizabeth Hospital, Dayton, O.; during the past six years I have operated on 198 cases of various rectal diseases in the charity wards; 42 have been for fistula; 7 of the 42 have been without doubt tubercular; 2 of the 7 died after several months of comparative comfort. In tuberculous patients the fistulous tract may never heal completely, or it may heal temporarily to open later and continue a free discharge. Under such circumstances the operation should be repeated.

HARVARD MEDICAL SOCIETY OF NEW YORK CITY.

Stated Meeting, Held Saturday, March 24, 1900.

The President, John B. Walker, M.D., in the Chair.

Abscess of the Lingual Tonsil.—Dr. Frothingham presented a patient suffering from abscess beneath the lingual tonsil on the right side. While peritonsillar abscess is very common around the faucial tonsils, it is a rather rare conditon in the lingual tonsil. The symptoms carry with them not a little that is alarming and the thought not infrequently comes to the practitioner, owing to the intense difficulty of breathing and swallowing, that there may be developing edema of the glottis. The condition is one of extreme discomfort. Its diagnosis depends on careful inspection with a laryngoscopic mirror. The fossa in front of the epiglottis and on either or both sides of the epiglottic ligament is found filled up with an inflammatory swelling. During the early stage of infiltration this is hard to the touch. Later on after suppuration has set in fluctuation may develop, but the patient's condition will be very much relieved by incision into the mass as soon as it is detected. Even if pus is not reached, the incision will do good.

Hysterectomy for Puerperal Infection.—Dr. Egbert Grandin said that lymphatic infection in a puerperal woman travels so rapidly that usually there is very little hope of operation being able to remove all the foci of infection. For this reason, although frequently tried, hysterectomy has never become popular. At the beginning of the septic condition there is some difficulty in deciding what form of infection is present. Sapremia often gives very marked symptoms. The invasion of saprophytes frequently cause the elaboration of toxin, the absorption of which produces serious constitutional symptoms. For sapremia, however, the curette and lavage usually suffice. Symptoms promptly disappear after the removal of the material within the uterus on which the saprophytes were being nourished. When instead of saprophytes the infection is due to the streptococcus, this micro-organism rapidly finds its way into the lymphatics. There is very little hope in ordinary cases that the whole focus of infection can then be removed even by extensive operation. In two recent cases, however, Dr. Grandin has succeeded in saving life by hysterectomy.

Lymphatic Infection.—In the first case Dr. Grandin, as consultant, was doing a curettement after an abortion that had been produced by unclean instruments. An intensely septic condition had developed and the uterine tissues had become very much softened. During the curettement the curette slipped through the softened decidua and the uterine tissue itself into the abdomen. This led to the performance of an abdominal section. After laparotomy the true condition, a complete septic involvement of the whole genital apparatus, was found. There was pus in both tubes and the whole uterus was softened and flabby with layers of dirty fibrinous material on its serosa. Already infection of the abdominal cavity was beginning. The uterus and its adnexa were removed, and the abdomen thoroughly flushed out. Although the case seemed hopeless the patient recovered.

In the second case, three weeks after an abortion, the symptoms became so threatening that laparotomy was done as a last resort. The internal condition was even worse than in the preceding case. Shreds of lymph covered not only the uterus but also all the coils of the intestine lying in contact with it. The uterus itself was softened and the tissue almost ready to disintegrate. The broad ligaments were so soft that the sutures tore out again and again. In twenty-four hours after the removal of the uterus and tubes and ovaries the symptoms subsided. In this case streptococcus serum and the Credé ointment were used very freely in conjunction with the operation. The cause of the abatement of the symptoms, however, was undoubtedly the removal of the focus of infection. The other methods of treatment had been tried beforehand without any lasting results.

There is, then, a field for hysterectomy in puerperal sepsis although it may be a limited one. In advanced lymphatic infection it constitutes the only method of treatment that gives any assurance of saving the patient. The difficulty of diagnosis in these cases of lymphatic infection must be acknowledged. In order to be sure that it is not a sapremia that is causing the symptoms of general sepsis, it is necessary to investigate the inside of the uterus with the fingers. This should be done under anesthesia for a satisfactory examination cannot be made otherwise. In 99 per cent. of the cases examination of the interior of the uterus with the finger can be made without any preliminary dilatation. Where the inside of the uterus is found free from putrefying material and the symptoms of septic infection are severe, laparotomy offers the best chance to the patient and is amply justified by the seriousness of the condition present. The only hope, however, of radical cure in these cases lies in the performance of operation early, as lymphatic infection spreads very rapidly and if it has once gotten beyond the genital organs is surely fatal. Accurate diagnosis and prompt operation is the only thing that will save the patients in these serious cases.

Selection of Cases.—Dr. Henry C. Coe said that he thoroughly agrees with Dr. Grandin's suggestion as to operation for puerperal infection in selected cases. He approves fully of the principles that Dr. Grandin lays down as to the differentiation of the forms of puerperal sepsis and their indication for treatment. The difficulty lies in the selection of the proper cases to operate on. Usually operation is delayed so long that radical operation is useless. In the service at Bellevue most of the cases that are admitted to the hospital suffering from puerperal infection are cured

by curettement. Some of them already have peritonitis when admitted and then they are hopeless. An exploratory incision is certainly justified where the symptoms continue after the uterus has been thoroughly cleaned out. At times it will be found that the infection has spread not through the lymphatics, but through the Fallopian tubes. In a recent case under Dr. Coe's care after laparotomy, it was thought that the infectious material was limited to the uterus and tubes. The peritonitic symptoms continued after the operation, however, and the patient died. It is the custom in the text-books to separate metritis and endometritis sharply from one another. As a matter of fact no such clear distinction exists between the two processes either clinically or pathologically. Not infrequently we leave infected foci in the uterine wall after curettement. Once in Dr. Coe's experience, when a patient was being curetted for the second time, the curette slipped into a cavity from which there came a fetid pus. There seems to be no doubt that this was an abscess cavity in the uterine wall. This case had continued to have febrile temperature despite curettement and intra-uterine douching. Multiple abscesses not infrequently exist in the uterine walls. These cases are especially suitable for extirpation of the uterus. Dr. Coe agrees with Dr. Grandin that vaginal hysterectomy is not suited to these cases because it does not enable the surgeon to get a proper view of the field of operation so as to remove all suspicious-looking tissue. The abdominal exploratory incision as suggested is without doubt the most suitable for these cases.

Streptococcus Infection.—Dr. Brewer said that if the puerperal infection is due to the streptococcus and peritonitis has once begun, operation does no good. If the puerperal infection is due to certain germs of less virulence than the streptococcus, or is due to a mixed milder infection, hysterectomy may be of the very greatest service. The difficulty in these cases lies in the diagnosis. Cases due to ordinary mixed infection will often get well under simple treatment and curettement. Until more assured indications for operation are found there will very naturally be great hesitation in performing so serious an operation as hysterectomy at a time when it may do no good.

Dr. Coley emphasized the difficulty of diagnosis. He added that Dr. Richardson of Boston has expressed the opinion that operation in these cases is liable to cause a rapid spread of the infective material and so make the process more acute than it was before. Undoubtedly, however, there are some cases in which operation saves life.

Infrequent Mixed Infection.—Dr. Marx said that puerperal fever is very rarely due to mixed infection. In 95 per cent of all cases of the disease it is due to the streptococcus. When streptococcus serum was first introduced into medicine there seemed to be good hope that the fatality of puerperal infection might be reduced by it. In 25 cases of pure streptococcus infection, however, treated by Dr. Marx with Marmorek's serum all the patients died, and he will never use it again. The Credé ointment has seemed to be life-saving in one case. The case was one of sapremia, not due to retained secundines, but to a pseudomembranous affection of the uterus and vagina for which every remedy, including streptococcus serum, had been tried without any improvement. Twenty-four hours after the employment of the Credé ointment the local condition was improved. In forty-eight hours the constitutional symptoms had practically all disappeared. In one of the two cases reported by Dr. Grandin, in addition to the operation, the Credé ointment and streptococcus serum were used. Dr. Marx thinks that the use of the Credé ointment was an important element in the recovery. In another case in which certain septic symptoms had continued for eighteen days, operation was tried as a last resort but the patient did not recover. At the autopsy miliary abscesses were found in the lungs and liver although they had not been noticed at the time of the operation. In extreme cases laparotomy is undoubtedly justified, provided there are no metabolic abscesses, but it is difficult to determine this.

In a recent case seen by Dr. Marx the puerperal infection was really antepartum in origin. There had been chills and high fever before the birth of the child. In the uterine secretions streptococci and colon bacilli were found. This caused considerable surprise and a tentative diagnosis was made of communication between the intestines and the uterus. At the autopsy this proved to be the case. The base of an ulcer in the large intestine had contracted adhesions with the uterus and had gradually eaten its way into the uterine cavity. In a case like this hysterectomy would certainly do good. Severe cases of puerperal infection may, as is well known, recover even after all hope seems past, therefore the greatest care and watchfulness is needed in deciding as to the indications for hysterectomy. Especially must there be absolute assurance that there are no retained secundines within the uterus. More than once after the removal of a uterus it has been found full of foul-smelling secundines, which showed that the hysterectomy was unnecessary and that the infection might have been overcome by simple emptying of the uterus.

In concluding the discussion, Dr. Grandin said that while it is his custom to treat puerperal sepsis by ordinary methods, the object of his present paper was to show that there are some cases in which operation may prove of life-saving value. The ordinary practitioner, when septic infection declares itself, washes out the uterus and curettes on general principles and, if the symptoms do not abate, repeats these procedures. After two or three repetitions a consulting surgeon is called in and then, if the infection has been a lymphatic one, it is too late for radical operation. The lesson to be learned is that when there are pronounced symptoms of sepsis, careful examina-

tions should be made to decide just what the origin of the septic symptoms is. This can only be done by intra-uterine palpation under an anesthetic. If no intra-uterine cause can be found an exploratory laparotomy is indicated. It will not add to the danger of the case and it gives the patient an added chance for life. A more definite diagnosis than is now made of the true condition present should be reached even before the uterus is washed out.

Hodgkin's With Paraplegia.—Dr. John H. Huddleston reported a case of Hodgkin's disease that had developed in a woman of twenty-eight who had had three children, no miscarriages and no syphilitic history. The affection was complicated by paraplegia. Cervical, inguinal and axillary glands were enlarged as well as the spleen and the liver. The blood was normal. The paraplegia in the limbs had developed gradually. A numbness was noticed first and then paresis of the lower limbs which gradually increased to complete paralysis. Incontinence of urine then developed and bedsores were noticed. Sensation was gone up to the nipple-line. Osler reports such a case of Hodgkin's disease with paraplegia in which he considered that the explanation of the paralytic symptoms was the presence of enlarged glands on the spinal cord. This opinion is not easy to accept. It seems more rational to think that there are lymph deposits within the cord composed of material similar to that which is found in Hodgkin's disease in the liver and spleen.

Two Risks in Abdominal Surgery. Dr. Henry C. Coe called attention to the fact that laparotomy after an attack of influenza is apt to be followed by bronchial pneumonia. In two cases recently admitted to Bellevue for laparotomy the patients were recovering from influenza. This was not, however, noted in the history, the patients themselves thinking it of no importance. After an operation they promptly developed bronchopneumonia, and inquiry revealed that they were convalescing from an attack of grip. This same complication has been noted before and now it is made a rule always to ask, especially during seasons of prevalence of influenza, whether patients have had any symptoms of the disease or not.

The second danger is illustrated by the following case: The patient was suffering from a simple fibroid of not very large size. The operation was considered not serious and did not last very long. It was conducted in the Trendelenburg position. During the operation there came an extremely offensive almost fecal discharge from the stomach. After the operation the patient developed bronchopneumonia and was dead in thirty-six hours. The stomach was carefully washed out and nothing abnormal was found in it. Thorough purging was employed immediately after the operation. It is probable that in this case antiperistalsis brought a quantity of intestinal contents from the lower part of the intestines into the stomach whence it was expelled by vomiting. Some of the intestinal bacteria found their way into the lungs where they caused the development of pulmonary edema and so brought about the fatal termination.

Gall Stones Simulate Cancer.—Dr. Coley reported a case of a woman, forty-eight years of age, who ten years ago suffered from pain in the epigastrium. This was intermittent and was sometimes very severe. The diagnosis was gastralgia. Last year the pain became much more frequent and the discomfort was so severe as to be almost unbearable. The woman lost forty pounds in three months and, although there was no bloody vomiting, some blood was noticed in the stools. The diagnosis of cancer seemed inevitable. An exploratory incision seemed justified and was made. Although no tumor could be felt, there was found an intensely contracted gall-bladder containing a stone the size of an English walnut and considerable pus. All of the symptoms had evidently been due to chronic empyema of the gall-bladder. After the incision the walls of the bladder were stitched to the abdominal wall and drainage established. The interesting feature of the case is that the woman lost thirty pounds as quickly as if she were suffering from malignant disease and the only reasonable diagnosis seemed to be cancer marasmus.

Diplococcus and Gonococcus.—Dr. Cabot reported a case of a man, forty-eight years of age, who presented himself with a free urethral discharge, not very purulent in character. The following day the discharge became more free but was never frankly purulent. There was some frequency of urination but no burning, but there was considerable discomfort in the perineum five days after the first symptoms. The man had never had gonorrhea and there had been no suspicious intercourse, in fact none at all for three weeks before the occurrence of the discharge. Examination of the secretion revealed what seemed to be gonococci. They were distinctly diplococcus in form and occurred within the cells of the secretion, but were slightly smaller than gonococci usually are. They discolorized by Gram's method. They absolutely refused to grow on chest serum agar although gonococci grow in 95 per cent. of the cases on this culture medium. The patient had often been troubled with giant urticaria and angioneurotic edema. He was so liable to attacks of these troublesome conditions whenever any digestive disturbance occurred that he had finally come to restrict his diet mainly to milk and eggs. He was treated only with some ordinary potash solutions and after five or six days the discharge decreased. Palpation through the rectum showed that he had a sensitive and somewhat enlarged prostate. He had recently had an attack of gout and there is some question as to whether all of his urethral and prostatic symptoms are not due to the gouty diathesis and to the neurotic condition that underlies his frequent attacks of angioneurotic edema.

In the discussion Dr. Fuller said that it seemed probable that there is in this case an old purulent

focus in the prostatic region and that an acute exacerbation of this is causing the urethral discharge. There is no doubt that it is an extremely difficult problem to differentiate certain forms of the diplococcus from the gonococcus. The microscope alone is certainly not sufficient to enable us to make the differentiation. Where diplococci occur only outside of the cells they are almost surely not gonococci, but even where they occur within the cells and are decolorized by Gram's method it is still not absolutely certain in all cases that they are gonococci.

Dr. Cabot, in closing the discussion, said that the differentiation of the diplococcus and the gonococcus was not yet scientifically certain. There are undoubtedly difficulties yet remaining in the differentiation of certain forms of the diphtheria bacillus. Diphtheria bacilli are found that respond to all the ordinary bacteriologic tests except their lack of virulence and would seem to be true Klebs-Loeffler bacilli, yet are not. In the same way, a doubt still remains as to the pathogenic specificity of certain diplococci.

REVIEWS.

International Clinics. A Quarterly of Clinical Lectures on Medicine, Surgery, etc., and Specially Prepared Articles on Treatment and Drugs, by professors and lecturers in the leading medical colleges of the United States, Germany, Austria, France, Great Britain and Canada. Edited by Judson Daland, M.D., Philadelphia. J. B. Lippincott Company, Philadelphia, January, 1900.

This volume of the International Clinics contains as many useful practical articles as the preceding numbers. Dr. Frederick P. Henry of Philadelphia has a special article on the treatment of pneumonia by hypodermoclysis, that is, by large hypodermic injections of normal salt solution. He reviews his experience with this method of treatment for the last ten years. Despite the many claims for priority made in this matter Dr. Henry seems to have been the first to employ hypodermoclysis (1889). It was first tried in a woman, sixty-three years of age, who had a severe form of pneumonia and whose general condition made her eminently unsuited to resist the disease. Although there was no marked crisis in the case convalescence began on the seventh day and the fever subsided by the most typical kind of lysis. As Dr. Henry remarks, while pneumonia treated by ordinary methods terminates by lysis, it does not do so on the seventh or ninth day. Altogether here are the notes of ten Blockley cases of pneumonia treated successfully by hypodermoclysis. As is well known, Blockley cases, occurring in paupers, alcoholics, tramps, etc., are the most unpromising possible, and the death-rate among them usually runs as high as 50 per cent. Dr. Alfred C. Haven illustrates a very practical method of administering hydrotherapy in the homes of the poor. Now that hydrotherapeutic measures are looked upon with ever-increasing respect by the profession generally, Dr. Haven's methods are well worth considering. Dr. W. W. Bulette contributes a special article on the use of suprarenal extract in surgery of the ear, nose and throat.

This number of the International Clinics contains some twelve articles contributed by distinguished foreign clinicians. Some of their titles only can be quoted to show their thoroughly practical interest. From Sir Dyce Duckworth there is an article on "Morbid Proclivity of Diatheses; Professor Friederich Mueller of Marburg has a clinic on "Bronchial Asthma"; Dr. Hermann Schlesinger of Vienna an article on "Stenosis of the Aorta Near the Duct of Botalli"; Professor Martius of Rostock has a very interesting contribution on the "Time of Heart Murmurs and the Significance of the Apex Beat." Professor Friederich Mosler of Griefswald contributes a clinic on "Central Pneumonia."

In neurology, especially, the foreign contributions are important. Professor Mendel of Berlin has an extremely practical article on "Cerebral Apoplexy." It is an unsurpassed review of this difficult and very practical subject for the general practitioner. Professor Pick's article on "Intracranial Gumma in the Frontal Region," and Professor Jolly's clinic on "Multiple Sclerosis with Cerebellar Symptoms and Cerebellar Tumors" are most suggestive reviews of very difficult subjects.

THERAPEUTIC HINTS.

Treatment of Tubercular Lesions by Nascent Iodine.—*Topai* of Rome recommends the following method in cases of tubercular adenitis, osteoperiostitis, arthrosynovitis, etc., it having yielded favorable results in his own practice. After anesthetizing the skin by a freezing application, a 3.6 per cent. solution of peroxide of hydrogen is injected hypodermically, drop by drop, into the affected area, the needle being moved in various directions. Leaving the needle in place, another syringe containing a 2 per cent. solution of potassium iodide is attached, and from 6 to 30 minims of this is injected. The needle is then withdrawn and the part is gently massaged. Metallic iodine is generated in the tissues upon which it has a marked curative action. The part becomes slightly swollen and is painful for a time. The treatment is repeated every four or five days, choosing a new place in case of an extensive lesion. For a fistula or abscess cavity, first the peroxide and then the potassium iodide solution is dropped into its depth through a drainage-tube.

No corrosive sublimate should be used either in connection with the lesion or the syringe, as its presence would lead to the formation of the biniodide.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

ASPIRATION IN THE TREATMENT OF ACUTE TRAUMATIC EMPYEMA: WITH AN ILLUSTRATIVE CASE.[1]

BY JOSEPH D. BRYANT, M.D.,
OF NEW YORK.

IN the brief considerations that are to follow we are disposed to speak of an isolated case falling under this topic, not only because of the medical interest it seems to possess, but chiefly because both the case and the means of cure were deeply interesting to the distinguished medical gentleman in whose garland of respect this contribution is but an unpretentious leaf. We are fully aware of the fact that an isolated example of an uncommon manner of practice is much more likely to be suggestive than convincing in its influence; if, however, it be but indicative of prospective utility, then indeed we are more than satisfied, and prompted to express the hope that it may be an earnest of greater outcome.

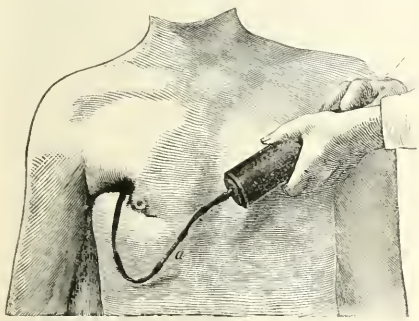

FIG. 1.
The Aspiration of the Cavity. *a*, the glass observation tube.

Inasmuch as the case in question is elucidative of the effect upon the thorax of blunt violence of a severe type, and also that the cases of this character are necessarily comparatively rare, a description of the accident along with its leading features will be given.

On July 26, 1899, a gentleman of about twenty-four years of age, and of good personal and family history, while sitting at the extreme and most exposed position on a trolley car going at a rapid rate, sustained a penetrating wound of the right side of the chest from the shaft of a heavy vehicle passing in the opposite direction. The end of the shaft entered the pleural cavity at a point just below the right nipple and corresponding to the 4th rib, pased backward between the 3d and 5th ribs to about their posterior third, and escaped at the right side, lacerating extensively the pectoral muscles.

The lateral portion of the 4th rib was broken into two fragments, each about four inches in length, the anterior fragment remaining attached to the 5th rib only by means of the intercostal tissues, while the posterior was connected to the same rib by a mere shred of these structures. The opening into the pleural cavity, therefore, was about eight inches in length and corresponded to the space between the 3d and 5th ribs, which were not injured. The integument covering the ribs was contused, especially in front, and torn for a distance of about four inches at the side. Hemorrhage had not been severe, and but slight shock followed the injury. Tympanitic percussion was manifest at each aspect of the right side of the thorax.

Under chloroform anesthesia, and as soon after the accident as possible, the cutaneous wound was increased in size so as to permit a free inspection of the deeper portion of the injury. The anterior fragment of the rib was restored to its proper place and retained until union ensued by uniting together the borders of the torn tissues between it and the rib above with chromicized catgut. The posterior fragment was raised from within the pleural cavity, and, after severing its brief connection with the rib below, removed entirely. The muscular tissues at the side were greatly lacerated and the intermuscular planes filled with blood. The right lung, though markedly collapsed, was uninjured and projected partially from the opening during expiration. Hemoptysis was not present at this nor any subsequent time. The lower and posterior portions of the pleural cavity were filled with bloody fluid which freely escaped with coughing. The fluid was poured from the cavity by turning the patient to the right side, and the space between the 3d and the 5th ribs was plugged firmly with iodoform gauze to permit of free cleansing of the soft parts without needless infection of the serous cavity.

Liberal incisions for drainage were then made, one into the axilla, the other at a point a few inches below, and the injured soft parts were freely laved with a solution of carbolic acid promptly followed by another, the hot saline solution. The soft parts were packed with iodoform gauze, the gauze between the ribs was removed, and the pleural cavity was freely flushed with hot saline solution. During the act of washing,

[1] By the courtesy of the Committee on the Festschrift in honor of Dr. Jacobi.

the exposed surface of the lung was carefully observed, in order to detect appearances of injury, but none were found.

The inner and posterior boundaries of the cav-

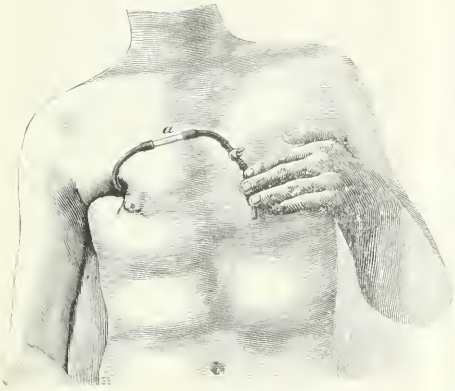

Fig. 2.
The cavity aspirated and stop-cock closed to prevent admission of air.

ity was exposed during inspiration, and could be readily inspected. The convex surface of the diaphragm was explored with the finger for injury, and found to be intact. It is interesting in this connection to note that the anterior limit of the fracture corresponded to the attachment of the diaphragm at that situation to the fractured rib.

Four narrow strips of iodoform gauze were then introduced at intervals into the pleural cavity, the external ends hanging low without for drainage purposes. The iodoform gauze heretofore introduced to shield the soft parts during the washing of the pleural cavity was removed, rubber drainage tubes were carried through the openings, the entire inner surface of the wound was loosely packed with aseptic gauze, and the external wound and much of the cutaneous surfaces were covered loosely with a similar dressing, which was then held in place with carbolized adhesive plaster strips so applied as to impede as little as possible the respiratory movements of the opposite side of the chest.

It seems needless to add that the preparation of the field of operation and the entire subsequent technic were practised with aseptic care. It was hoped at the outset to prevent infection of the pleural cavity and thus obviate the occurrence of acute traumatic empyema and the subsequent happenings that its presence implies. But the nature of the injury, the character of the infecting agent and the fact that the clothing overlying the traumatism was torn, bloody, and had evidently been forced into the wound, forbade the encouragement of a probable success. The wound was dressed for the first time on the third day and a specimen of the intrathoracic fluid was examined and pronounced sterile. On the fifth day, however, infective micro-organisms and pus corpuscles in the fluid were quite numerous. Suffice it to say that in spite of our best efforts free suppurative processes were soon fully established throughout the entire field of traumatism. The exposed surface of the lung was covered quite promptly with a thick resisting layer of lymph which invested as well the parietal serosa. The purulent fluid was withdrawn from the chest by means of a syringe applied to the outer end of a rubber tube, the inner end of which was placed at the bottom of the suppurating cavity. Through the tube washing was done with boric solution after each withdrawal of purulent fluid. The wound was kept clean by a daily dressing of gauze. Because of the presence of the tube in the chest, it was easy to estimate, by measurement of the fluid introduced, the capacity of the morbid cavity. On August 3d it held sixteen ounces, about two ounces less than five days before. It was evident at this time that the expansion of the lung was lessening because of the restraining influence of the lymph covering its surface. Therefore it was determined to overcome this effect if practicable and at the same time to further facilitate the return of the lung to the normal capacity, by exhausting the air of the morbid cavity to a greater or less degree, thus lessening the atmospheric pressure from without. Accordingly various attempts were made to prevent the entrance of air at the sides of the tube following the pressure created by the withdrawal of air from the cavity. An aluminum shield, formed upon a mould of the wound and contiguous surface, and fitted with

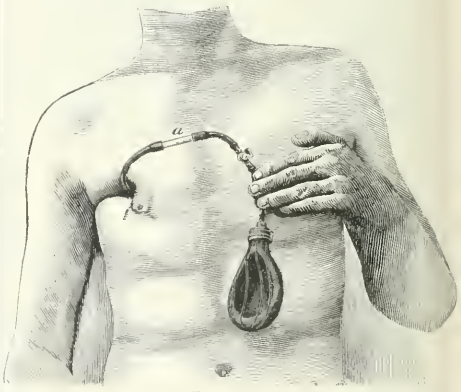

Fig. 3.
The collapsed rubber bag attached and stop-cock opened; the apparatus in action.

thumb-screws and other attachments, failed because of constant changes in contour of the chest wall incident to breathing, change of posture, etc., combined with the inflexible nature of the shield. Strips of adhesive plaster closely applied

around the tube, and to the wound, reducing its size, were of fickle utility. Yet it can be properly said at this time that these failures were attended with commensurate good, for at first so trifling a disturbance of air equilibrium as that produced by the removal of two drams caused prompt and distressing cough, until uniform pressure was restored again by entrance of air. At a later period, complete exhaustion of air caused no responsive afflictions. The continuous and effective efforts of nature, combined with the

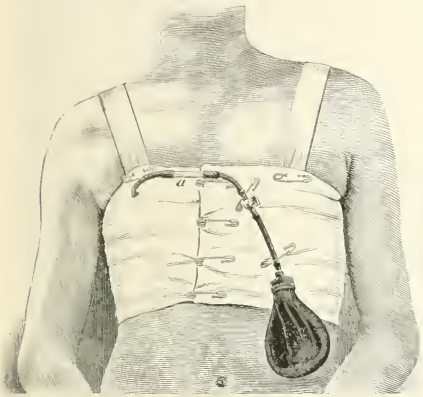

FIG. 4.
The dressings applied; apparatus held in place by safety-pins while in action.

abortive attempts of the writer, lessened the capacity seven ounces in twenty-four days, hence at the rate of two drams and a third each day. Therefore on August 27th the cavity held nine ounces. The pulse, temperature, and respiration differed but slightly from the average rate of the preceding four weeks, viz., 108, 101° F., and 25 respectively. At this date the withdrawal of air from the cavity with the syringe caused the soft parts to grasp the tube tightly and thus establish for the first time as complete and continuous a vacuum as was then advisable. (Fig. 1.) The attachment to the tube of a stop-cock made it possible to prevent the entrance of air after the syringe was removed. (Fig. 2.) Two days afterward a collapsed rubber bag was attached to the end of the tube for the purpose of maintaining a continuous vacuum when desirable. (Fig. 3.)

The curative action of this simple apparatus was easily obtained by exhausting the air from the cavity with a syringe, then closing the tube with the stop-cock before removal of the syringe, followed by the attachment to the end of the tube of a collapsed rubber bag to maintain the vacuum after reversal of the stop-cock. The space around the tube where it entered the chest was closely packed with absorbent cotton saturated with carbolized oil to limit the entrance of air around the tube at that point. Several layers of aseptic gauze were placed over the field of injury and held in position by a body binder so fastened above as to prevent slipping down. The tube was held in place by safety-pins carried around it and fastened to the dressing. (Fig. 4.) Then the patient himself or the attendant had only to close the tube with the stop-cock before complete filling of the bag, expel the contents by squeezing, reapply it collapsed, reverse the stop-cock, thus reopening the tube, and again the apparatus resumed its action. Not only was air removed from the cavity by the suction but also a great proportion of the liquid inflammatory products as well. The introduction of a short glass tube (*a*) into a breach of the continuity of the rubber tube permitted observation, during the action of the bag, of the character of the fluid being withdrawn from the chest. As already stated, the cavity held on the 27th of August nine ounces; on August 31st it held six ounces; September 7th, two ounces; and on September 11th, when the patient was discharged, an ounce and a half, being a gain of seven ounces and a half in fifteen days, or an average of half an ounce a day, and therefore much in excess of the previous average.

The effect of the treatment on the pulse, temperature, respiration, and character of the fluid during the last two weeks of the treatment is noteworthy. The first week the pulse, temperature, and respiration averaged 100, 101° F., and 22 respectively; during the last week, 85, 99° F., and 20 respectively. The character of the fluid during the first three or four days of this time changed but little, but during the last ten days altered gradually from a purulent to a serous nature. We hasten at this time to express the important fact that a too great exhaustion of

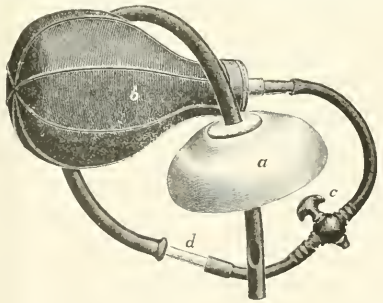

FIG. 5.
The Aspiration Apparatus. *a*, hollow rubber cushion; *b*, distended rubber bag; *c*, stop-cock; *d*, glass observation tube.

the cavity of air during the earlier application of the plan caused an unpleasant sense of thoracic constriction and was followed promptly by sanguineous staining of the fluid withdrawn from the chest by the syringe. It was recognized that a too great degree of aspiration might not only cause undue determination of blood toward the

cavity and objectionable bloody oozing into it, but also emphysema of the lung because of the general or localized excessive demand on the air cells arising from the consequent increased intravesicular pressure. Therefore aspiration forced to the extent of reddening the fluid was seldom practised, for it was regarded as entirely unnecessary and possibly unsafe. In fact the aspirating influence of the bag was kept at almost a minimum by close adjustment of the stop-cock regulating the caliber of the tube. After leaving our care on September 11th, the patient continued the use of the apparatus at varying intervals until the capacity was scarcely more than a dram, and at the end of three months from the time of the injury the wound had substantially healed. A much earlier application of this principle of action could have been secured had it occured to us to introduce into the opening when of much larger size a tube suitably surrounded with an inflated rubber collar. (Fig. 5.) The width of the collar and the degree of the distention could have been easily arranged from time to time to conform with the requirements of the case. The one indicated in the illustration, although needlessly large and somewhat rude, answered the purpose well, clinging continuously and effectively for 24 hours to the thorax of a patient having a rigid walled cavity the sequel of an old thoracotomy. It seems entirely justifiable to assume that the obliteration of the cavity in the stated case was greatly facilitated by the preceding means, and it is also reasonable to suppose that prolonged suppuration, followed by much greater deformity than now exists, was prevented, and perhaps the radical measure of thoracotomy was forestalled.

As soon as this measure of treatment appeared to be entitled to seeming importance, we conferred with eminent practitioners of medicine regarding their opinion of its value, and inquired as to their knowledge of any previous utilization, for the purpose, of a similar means. From personal observation only, none were able to speak, but from belief based on recognized physical laws, and substantiated by this single instance, all were inclined to regard the method with rather more than favorable assent, in the treatment of recent acute cases. Realizing that a measure as simple as this could not possibly be regarded as entirely new, and expecting to learn from medical history of its conception and failure, or probably nothing at all because of its futility, we caused to be made a search of considerable extent of the literature of this topic. The results of the investigation disclosed, as one might think, numerous instances of severe injury of the chest from penetrating violence of various kinds. Often indeed the extent and complications of the injuries were expressed in minute detail, to the exclusion of particular reference to the characteristics of the agent that caused them. We have been able to find but four cases of shaft injuries limited to the thorax, and two others of a similar nature. Doubtless many more such cases may be hidden in the literature, but they do not appear to have been collected by any writer, and in any event reports of this form of accident are for some reason comparatively rare. The chief object of search for that class of cases was to determine whether in any account the outcome differed practically from that in cases due to other causes. It was believed that a better standard of comparison with our own case could thus be established. Failing in this respect, the attention was then directed to the complications and sequels of chest injuries from penetrating violence, to ascertain regarding the employment in the treatment of acute traumatic empyema of any method akin to ours. In this connection we will venture to introduce the following.

Bouveret in his great work entitled *Traité de l'Empyème*, Paris, 1888, a work comprising nearly 900 pages, traces the history of the surgical treatment of this affection up to the date of the publication. It appears that the operation of thoracotomy goes back to the time of Hippocrates, but it was not until the XVIIth century that the trocar and cannula came into use. The operations of incision and puncture of the pleural sac, with injection of fluids, were the sole resources of the surgeon until 1859, when Chassagnac made us acquainted with surgical drainage.

About 1871 Potain introduced in the treatment the use of the siphon, which permitted the simultaneous evacuation and lavage of the pleural sac. At a little earlier period Dieulafoy, too, invented his aspirator.

In 1872 the Paris Academy of Medicine discussed the subject of empyema, and four methods of operative procedure were reviewed, viz.: thoracentesis, drainage, thoracotomy, and iodized injections. The operation of costal resection, originally suggested in 1869 by Simon, of Heidelberg, was performed for the first time by Estlander in 1877, although there appear to have been several claimants for priority, in particular Letievant, who claimed to have resected the ribs for empyema in 1875. If we may trust Bouveret, it thus appears that up to the time his work was issued (1888) no author had made any feature of seeking to radically cure empyema by persistently lowering the intrapleural pressure. Potain, who introduced the siphon, may have expressed something of this idea, but his description, if ever published, is not accessible.

Bouveret appears to think that Estlander's operation was such a revolutionary advance in the direction of radically curing empyema that he recognizes no rival procedure.

Though Bülau was using siphon-drainage as far back as 1880, we have not succeeded in finding his original article; it is not mentioned in the catalogue of the Surgeon-General's library. His method appears to have been perfectly familiar to the members of the German Congress for Internal Medicine, held in 1890, for in the discussion on empyema at that time there are

many illusions to his method of radically curing empyema by "permanent siphon-drainage employed for the purpose of producing negative pressure." Some of the members criticised the method adversely, which led Bülau[1] to answer them in an article defending his procedure. In this article he makes reference to the discussion on the treatment of empyema at the meeting of the Medical Congress at Vienna, 1891, in which sides were taken as to the relative advantages of siphon-drainage and resection of ribs. The majority adhered to the latter, and Bülau claims that this view is due to unfamiliarity with the method of siphon-drainage. The chief opponent of this plan appears to be Glaser, and Bülau's article is a refutation of the arguments of Glaser.

The latter states that the pretended advantage of siphon-drainage is that it produces an intrapleural vacuum during inspiratory efforts, thereby giving the lung an opportunity to expand. Bülau himself makes this claim, and has always reiterated that the chief advantage of this form of drainage is that it lowers the pressure within the pleural sac and thereby promotes the re-expansion of the partly compressed lung tissue. Glaser claims that the tight bandaging which is used after resection of the ribs conduces to the same end.

Bülau appears to believe that some confusion may have arisen because of the foolish claim of some advocate of siphon-drainage that a vacuum was produced thereby in the thorax rather than in the pleural cavity. He says that in an empyema which has been opened with trocar and cannula, the latter being left in situ, the intrathoracic pressure will be the same as the external atmospheric and intrapleural pressure! And the elastic fibers of the lung tending to cause the latter to retract, re-expansion is impossible. So long as the fistula is open, the pressure remains in equilibrium, subject only to slight variations incidental to inspiration and expiration. According to Bülau, this condition is distinctly unfavorable for recovery, and the rational indication is to produce negative pressure in the pleural sac in order to give the lung a chance to re-expand; otherwise the patient is exposed to all the unpleasant sequels of empyema retraction of lung and chest, permanence of fistula, sepsis, amyloid disease, etc. To secure this "permanent aspiration" he employs the siphon-drainage, through which every inspiratory effort produces a sufficient amount of negative pressure to offset the elasticity of the lung. Wintrich found that 1/84 of the pressure of one atmosphere would offset this elasticity, while Donders makes the fraction 1/100. Bülau states that the pressure of a column of fluid 50-55 cm. high will fully offset this elasticity. If the pressure is more than this it causes intrapleural hemorrhage.

Bülau here introduces a case to illustrate the principle of his method. A chronic empyema (two years) was treated by incision and a cannula. Healing did not follow, and a freely discharging fistula resulted. The corresponding side of the thorax became much sunken and a uterine sound could be moved freely in the cavity in all directions. Bülau was about to send the patient to the surgical clinic for resection of the ribs, when the thought occurred to him that permanent aspiration of the pleural cavity might enable the lung to re-expand. A drain was introduced to the extent of 27 cm. and fitted to a siphon apparatus. After a space of three months the retraction of the lung had been considerably overcome, the cavity had become reduced to a mere fistulous tract, and the patient (who went about for a long time with the siphon bottle suspended from his chest) was finally cured by iodoform bougies introduced into the fistula.

This case shows plainly that lowering of the intrapleural pressure is a very practical method for securing the re-development of the lung; and that after a period of inactivity of even 15 months a lung may regain its former usefulness.

Much of the objection to the plan of siphon-drainage appears to come from the belief that fibrin-coagula which often occur in empyema will clog the tube. It has been shown that this danger is largely imaginary and readily avoided by substituting a fresh catheter for the clogged one.

Perthes[1] states that his method was made possible by the invention in 1869 of Bunsen's hydraulic pump which is in daily use in physiological and bacteriological laboratories. It produces a certain rarefaction of the air, and for use at the bedside a hydrant must be near at hand to supply the running water. The apparatus is ineffective unless the empyema-cavity is rendered air-tight—otherwise the external air will soon rush in and even-up the pressure. Perthes employed an inflated cushion of soft rubber for this purpose, the drainage-tube passing through its center. This cushion covered the thoracotomy incision, and was fastened *in situ* by a flannel roller. A vessel was employed in connection with the apparatus to collect and also measure the amount of discharge. A manometer applied to this collecting vessel indicated the exact amount of pressure within the pleural cavity. The pressure varies with inspiration and expiration, and as soon as the suction of the pump is applied the mercury rises in one limb of the manometer, so that when the desired degree of negative pressure is reached, the suction may be arrested.

Perthes has applied this apparatus in twelve cases of empyema. In the more recent cases auscultation and percussion showed that the lung had promptly re-expanded. In one case at least the ribs (6th and 7th) had been resected.

It was observed that after the aspiration a profuse serous discharge, often mixed with blood, preceded the appearance of pus in the reservoir. The author believes this fluid to have been forced out of the lymph spaces by the aspiration, and claims that it is salutary in that

[1] Zeitschr. f. klin. Med., Berlin, 1891, vol. xviii, p. 31.

[1] Verh. d. deutsch. Gesellschaft für Chirurgie, 1898, p. 71.

the poisonous products of the disease are thus flushed away. With regard to length of treatment, aspiration was kept up on an average for from seventeen to thirty days, while the entire treatment up to closure of the fistula ranged from forty-four to fifty days.

The degree of pressure which it is safe to employ is 10 cm. of mercury more or less. In a second case described at considerable length ribs had been resected by Trendelenburg. A third case is cited in which Bülau's siphon-drainage had failed and 5 cm. of the 7th rib were resected. In this case the aspiration was kept up forty-two days. In a fourth case 3 cm. of the 7th rib had been resected. According to this author the the method is totally unlike siphon-drainage, because it is only a stage in the after-treatment of cases in which surgical interference has been employed. It is intended, however, to replace resection of the ribs, because it enables the lung to re-expand and adapt itself to the costal pleura, while in the operation of resection the costal pleura adapted itself to the collapsing lung.

Apropos of the reaction between positive and negative intrathoracic influences in the case of empyema the following is significant:

R. W. Parker in a discussion on empyema before the Royal Medical Society[1] quotes a plan advocated by Bouchut of forcibly overcoming the retraction of the lung by inflating the latter through a tube introduced directly into a bronchus. Parker regards his method as heroic, and proposed instead to displace the pleural fluid by introducing filtered and carbolized air into the sac, and exhibited an apparatus devised for this purpose. He believed that after this procedure had been practised the air in the pleural sac ought to be less dense than the air within the lungs, and the intrapleural pressure less than the atmospheric pressure. This difference in pressure ought to be sufficient to enable the lung to re-expand; and would be maintained by the gradual absorption of the air within the pleural sac.

Other physicians present spoke favorably of the method. The theory appears to be as follows: the air introduced into the pleura tends to be absorbed somewhat rapidly. This absorption and rarefaction of air naturally lowers the intrapleural pressure and affords the retracted lung an opportunity to re-expand.

It appears from the foregoing that Potain in 1871 was the first to use the siphon-principle. Bülau seems to have been the first to develop the idea of permanent siphonage treatment, in the seventies.

Perthes, who employed the hydraulic air-pump, seems to have conceived the idea from Bülau's siphon-drainage method.

While it may not be to our credit, yet it is certainly true that the preceding method and the attending deductions are the products of our own conceptions. The comparative simplicity and security of the method commend it, but apparently it requires a more extended application to establish its practical utility. Neither time nor inclination prompts us to say more regarding it, as we prefer to leave its fate to the judgment of experience rather than to exploit its presumptive virtues even when sustained by immutable physical laws and by the practical demonstration which we have witnessed.

[1] Lancet, 1882, i, 689.

HEADACHE FROM EYE-STRAIN; ITS DIAGNOSIS AND TREATMENT.

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In 1892 I presented to the Chicago Medical Society a paper on "The Diagnosis of Ocular Headache" and endeavored to point out that this form of distress might, with some certainty, be distinguished from other kinds of headache. Although my own experience, as well as that of other ophthalmologists and neurologists, has since that time led me to slightly modify the opinions expressed upon that occasion, I still believe that the exercise of a little care and patience will enable any practitioner to differentiate between headaches of extra-ocular origin and those that are wholly or partially due to eye-strain. I still think that it is the duty of every medical man, be he a specialist or an non-specialist, to instruct himself in the natural history of all forms of headache, whether he aspires to remove the cause in a given case or not. Such knowledge would, for instance, deter the oculist from attempting to treat a malarial headache by cutting the external rectus muscle; the surgeon from dividing the supra-orbital nerve for the cure of a unilateral neuralgia due to monocular astigmatism; the physician from persevering with quinine, phenacetine, antipyrine and even "antikamnia" to effect a cure of that frontal distress which accompanies and is one of the common symptoms of recurrent glaucoma; the rhinologist from making the devious ways of the nasal meatus straight because his female patient complains of the dull vertical headache of uterine disease, and so on to the end of the chapter.

I propose to present, in a necessarily brief and incomplete fashion, the peculiarities of the headaches that proceed from impaired ocular function. It is somewhat difficult to define what is meant by ocular headache and yet some sort of definition is called for. Probably this one will be sufficiently comprehensive: Those aches and pains in and about the head that directly or indirectly result from organic disease in, or from impaired function of, any part of the visual apparatus may be called ocular headaches. I purposely exclude all forms of discomfort that find expression in the lids or the eyeball and other contents of the orbit.

The most important, because often the most obscure, kind of irritation is that which lies in

incomplete or unsatisfactory muscular effort, and then we obtain examples of a reflex pain. It is well to consider the path of the nervous influence in these cases. The commonest example is the supra-orbital headache so frequently encountered in ciliary strain. The exhausted ciliary muscle in its endeavors to bring about effective vision, through its sympathetic fibers or directly, causes an irregular discharge in the region of, or irritates, the third nerve nucleus which supplies it with the impulse to functionate. Close by the oculomotor nucleus lies the nucleus of the great sensory nerve of the face, the trigeminus. This in its turn becomes irritated and its final terminations on the forehead suffer. It is very likely that along with the severer peripheral aching there also goes a duller and deeper pain, probably situated in the cerebral centers, as well as in the sympathetic fibers supplied to the dura mater.

The proportion of the ocular element in all forms of headache is large. Including the mixed cases, I believe I am within bounds if I put it at 40 per cent. On the other hand, I feel certain that fully 80 per cent. of all frontal headaches are concerned in affections, mostly functional, of the eyes.

To come to the subject of diagnosis proper, I have first to speak of the *site* of ocular headaches. In the order of frequency we have, (1) the supra-orbital, (2) the deep orbital, (3) the fronto-occipital, and (4) the temporal. All sorts of variations from and combinations of these will be met with. A unilateral supra-orbital neuralgia, as indeed a hemicrania of any sort is not, in my experience, commonly due to eye-strain.

The character of the pain in ocular headache is not peculiar, but it is more likely to be dull and heavy than very acute, or, to answer to what is generally known as neuralgia. In the supra-orbital form it is very generally accompanied by aching in the eyeball and by the deep intracranial ache before referred to. Migraine, when accompanied by eye symptoms, has received several names indicative of the fact, *amaurosis partialis fugax* (Förster), *scotoma scintillans*, and ocular migraine (Galezowski). It is sometimes of ocular origin and when due to eye-strain, and the latter can be removed, the distressing attacks always diminish in severity or in frequency, and may even disappear altogether.

The exciting causes of ocular headache, aside from acute and chronic diseases of the eye, are peculiar and may help the diagnosis. First of all are those tasks which require the use of the accommodation and convergence; reading, writing, drawing, painting, typewriting, sewing, music, card-playing, draughts, billiards, etc., furnish the most common examples.

It sometimes happens that the pains do not come on until the next morning after over indulgence in near work; but as a rule the eyes and head commence to ache after a certain number of minutes or hours of close work with such regularity that the sufferer attributes it at once to some trouble with the eyes. Astigmatic, hypermetropic, and heterophoric patients also suffer when called on to use their eyes much for distant vision. A question which I invariably ask asthenopic female patients is whether their headaches are brought on by shopping excursions. This I have come to regard as an ideal test, since shopping is universally done, and it reaches the weak points in the ocular apparatus. The necessity for keeping a lookout in all directions to avoid collisions with fellow-shoppers in a crowded store, with pedestrians on the pavement and with men, women and vehicles on street crossings, the close examination of fabrics, often in a poor light, with intervals of rest to mentally dissect a passing bonnet—all these efforts make large demands not only on the general nervous energy, but particularly on the extrinsic and intrinsic muscles of the eye. When these latter are handicapped by muscular anomalies and refractive errors, the shopper usually goes home with a "raging" headache. In the same way riding in a railway-train or street-car, with the ever-changing panorama to be viewed through the car window, is especially trying to defective eyes. I am also sure that church, concert and theater headaches are mostly due to efforts made by abnormal eyes to stare at distant objects, while the cerebral centers are meantime being further irritated by rebreathed air and unshaded lights.

It is characteristic of ocular headaches that they are almost always accompanied by signs and symptoms easily referred to the eyes. After reading for a time, for example, the lines and letters may run together or become mixed up—a sort of temporary diplopia—the sclera is prone to get red from hyperemia of the conjunctival vessels, the lids often show signs of inflammation and may burn, smart and itch. The patient sometimes complains also of photophobia and of specks floating before the eyes, *muscæ volitantes*.

Finally, and this fact seems to me to be most important in connection with the diagnosis of ocular headache, the eye may appear, as far as symptoms and the results of inspection go, to be entirely free from disease. There is an ocular headache, but no apparent trouble with the eye. Moreover, as every ophthalmologist knows, the vision is frequently normal or even above normal, while many of the asthenopic symptoms just detailed may be altogether wanting. It is usually the person with unusually good distant vision, or who at twenty years of age has had it, who complains of eye-strain. The short-sighted individual has troubles of his own. He cannot distinguish objects in the distance but he does not suffer from headache.

Since astigmatism is probably the most frequent cause of headaches from eye-strain, the diagnosis of the latter may rest upon establishing the presence of the former. To the expert this is easy enough, especially when the Javal ophthalmometer and the skiascope are employed, or some of the other well-known objective tests made use of. The visual test card, the astigmatic chart and Pray's astigmatic letters I believe to be

the most effective subjective tests for astigmatism that the non-specialist physician can employ. These, with directions for use, can be had from any optician. Gould has suggested that a few drops of a one-per-cent. solution of hydrobromate of homatropine be instilled into the patient's eye every five minutes for an hour or so and if at the end of that time he cannot read with each eye separately the normal line on the test-letter chart, or if astigmatism be indicated, he should be examined further. I prefer a couple of homatropine and cocaine disks introduced beneath the lids and allowed to remain an hour and a half, the eyes being closed, before the examination. This is a harmless and efficient test both of the presence of astigmatism and hypermetropia, the two commonest causes of ocular headache.

Heterophoria, or weakness of the extrinsic eye muscles, is to some unknown degree a cause of ocular headache. One so rarely meets with an absolutely emmetropic eye that it is difficult to define the causal relations of ametropia and heterophoria in the production of cephalalgia.

Of the headaches that simulate ocular headaches the most common and the most difficult for the general practitioner to differentiate is the supra-orbital and supranasal pain of nasal disease. Polypi, hypertrophic rhinitis, deviations of the septum, mucous and purulent collections in the frontal sinuses, all produce headaches which resemble in character the frontal pains of eye-strain. In such cases there are usually other symptoms of "catarrh." Moreover, the chronic frontal headache of nasal disease usually continues during the night, while a purely ocular headache ceases when the patient has retired and the lights in his room are extinguished; there is no headache when there is no eye-strain.

Supra-orbital malarial neuralgia may usually be detected by its periodicity and by its being almost always paroxysmal and unilateral and not accompanied by other asthenopic symptoms. Then we have a form of headache which I should like to dub Roosa's headache, as he has best described it. It is ocular in character but occurs in a class, a rapidly increasing class, of neurotic men and women. These so-called "nervous" headaches may or may not be accompanied by refractive errors, but, when they are, correction of them rarely produces a complete or lasting cure. The pains, as well as the general condition, are often hereditary and occur mostly in men and women of weak constitution, nervous temperament, poor digestion, and deficient circulation. When these unfortunates are free from a pain in the forehead, they have it in the back of the neck, or it may leave both places and appear in the cardiac region, or in the pelvis. Often they are persons of marked intellectual development and may be quite free from what we usually term hysteria, but their ocular pains seem to be mere incidents of the general condition.

There is another class of practically incurable ocular headaches due to a combination of eye-strain and organic disease of the retina, choroid, or ciliary body. In defective development of the eyeball, in diseases of the macular region, broadly speaking, in almost all these cases where vision is not, or, in the nature of things, cannot be normal, headache produced by eye-strain is practically incurable. The headaches from iritis, glaucoma, and other acute diseases of the eye, are to be recognized by the presence of the affections themselves. The same may be said of true peripheral neuritis, supra-orbital herpes, supra-orbital neuromata, and growths within or at the margin of the orbit, in all of which there is frontal and supra-orbital pain.

While the effective treatment of ocular headache involves a careful examination of all the ocular structures, and an inquiry into the refraction, accommodation and oculomuscular balance of the patient, temporary (and occasionally permanent) benefit may be obtained from certain topical applications to the orbital region and by attention to the general health and habits of the sufferer. Although it may be stated as a truism that any departure from health may affect the eye and so act as an exciting cause of ocular headache, there are some disorders that appear to especially invite this form of distress. *Insomnia,* whatever be its origin, is one of these, and one may be well assured that complete relief is impossible as long as the patient's sleep is disturbed or insufficient, even if the underlying, local incentive to headache be removed. *Dyspepsia,* especially when it takes the form of an autointoxication due to too much eating and too little exercise, is a frequent accompaniment of frontal headache and should receive quite as much attention as the purely ocular symptoms. The possibility of excessive indulgence in tobacco and alcohol among male patients and in tea and coffee among female sufferers should not be overlooked. Among the latter class it is perhaps unnecessary to refer to the common coincidence of pelvic and ocular headaches. This is one of the most frequent forms of mixed headache. As a common example of the sympathy between ovarian disturbances and headache due to eye-strain, one may confidently expect an exacerbation of the latter during or immediately before each menstrual period. Such an experience does not always mean that there is something abnormal about the reproductive organs requiring attention; it frequently indicates that the nervous discharges involved in menstruation act as the "last straw" to break down the normal resistance of the peripheral and central neurons interested in the defective accommodation or the ocular imbalance, or both.

It follows from the foregoing that it is the duty of the surgeon to remove, as far as possible, all sources of nervous irritation so that the treatment of the eye-strain pure and simple may be as effective and the relief therefrom as lasting as possible.

As far as local applications are concerned (I

am opposed to the internal drug treatment of this symptom) the simplest, most effective and least harmful is the use of very hot or very cold fomentations. As a rule, the latter are the more grateful and more effective, but the choice can usually be left to the patient. He may be allowed to try both and then chose for himself. Take a medium-sized towel, folded so as to measure twelve inches long by four wide. Grasp an end in each hand and dip into a basin of cold (40° F.) or hot (160°-180° F.) water. Bending over the basin, press the dripping towel gently against the closed eyes, forehead and temples. Change frequently and continue the applications for five or ten minutes, stopping them if additional pain or discomfort be produced. Do this every hour or oftener while the headache lasts. In conjunction with these fomentations the following mixture may be rubbed over the forehead and temples, or a towel, wet with one part in ten of ice water, may be laid over the closed eyes and forehead while the patient is lying down:

Spirits of lavender, alcohol, of each 3 fluid-ounces; spirits of camphor, 1 fluid-ounce.

The official ointment of veratrine or aconitine—a little carefully rubbed on the skin supplied by the supra-orbital nerve—is occasionally an effective remedy, but it is a dangerous one and not to be generally recommended. A similar application, requiring less caution, is the following liniment, to be well rubbed in:

℞ Chloroform 5ss
Camphor 5i
Tincture of aconite.....5i
Oil of peppermint.....5i
Alcohol 5ii

Shake well and apply every two or three hours.

Finally, temporary relief may usually be obtained by the use of a weak, interrupted (or continuous) galvanic current, 3 to 5 ma., the positive pole applied to the nape of the neck, the negative, preferably by means of a double eye-electrode, to the closed lids, for from two to ten minutes.

A CONTRIBUTION TO THE MANAGEMENT OF FACE PRESENTATIONS.[1]

By MALCOLM McLEAN, M.D.,
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In submitting this very brief contribution to the subject of the management of face presentations, it is my desire and intention to limit my observations practically to the presentation of a method of dealing with the head thus faultily placed, which has something of a novelty in it. Not that the method is proposed as a new one, one that has not been before suggested at least, but, that the plan of procedure has been carried through according to prearranged scheme and with perfect success.

We are all more or less familiar with the various ingenious devices suggested and presented in the past for the correction of this undesirable position of the presenting head; among the best of which, for the sake of illustration, I will mention only Schatz's method of converting a face presentation into one of the vertex. It will be remembered that Schatz aimed at early correction of the position, while the head is yet free, above or at the superior strait, and the amniotic sac intact, with its waters undischarged. And his method of altering the position and direction of the spinal column of the child, and tilting up the chin, so that the occiput may settle into the inlet, has many things in its favor. For we believe that, if the curves of the spine be properly secured, the tendency will be to spontaneous restoration of the occiput to its normal axis for normal engagement.

Two difficulties, however, confront us in the performance of this manipulation and in securing the ends for which it is instituted.

First, the diagnosis of the impending malposition is not so easy as we might be led to suppose by the teachings of our text-books and of other learned sources of information. And it is the rule, and not the exception, that these cases are only discovered after labor has been well established, and there has been considerable descent of the head. Indeed, it seems very probable that in the majority of cases the faulty extension of the head is itself produced as the head attempts to settle into the pelvic canal. And, if the descent be far advanced, the pains to a considerable degree expulsive, and, especially, if the waters have been discharged, it is rather late to attempt to secure the benefits of Schatz's operation. Second, it is not easy to so secure the corrected position that relapse into the exended pose may not occur. In my own experience in four cases of true face presentation, the head was well engaged in the pelvic canal before the obstetrician either discovered the true state of affairs, or was called to give his assistance. In one case a diagnosis of breech presentation was made, and the mistake not recognized until the waters were discharged, and the face was thrust well down into the passage. Judging from this experience, and from experience in hospital and consultation practice, I have little hesitation in believing that these cases will generally be recognized only after the engagement is pretty complete.

We will assume, therefore, that the face has descended into the canal and confronts us by a presentation which will prevail throughout the labor, unless art may render such assistance as will make a true conversion of the whole mechanism. It is taught, and pretty generally believed, that the dangerous positions of the face, the mento-posterior, will, as a rule, be self-corrected as soon as the chin reaches the floor of the pelvis and is diverted from the posterior to the anterior plane by forward rotation. Thus we might feel assured of a comparatively normal mechanism and the safe termination of the majority of our cases. My own experience has not, perhaps, been large enough to speak with authority on

[1] Read before the American Gynecological Society at its meeting in Washington, May 1, 2, 3, 1900.

this point, but it has led me to fear that this is somewhat delusive teaching. For, in only one case have I found this happy issue; and, indeed, that was only secured by active assistance on the part of the attendant, and can, therefore, hardly be classed as one following the fortunate rule to which allusion has been made. It is certainly true that a considerable proportion of cases will maintain a faulty position, with the chin seeking the hollow of the sacrum, thus locking the presenting part in one of the most awkward situations that can well be imagined. For, although a very small head has been wrested by great violence from such a plight, and delivery accomplished, it is safe to declare that this operation is unscientific and grossly dangerous to both mother and child. And, moreover, it will generally fail utterly, and compel us to dig the head of the dead child out of the pelvis by craniotomy, an operation which should never be necessary within a normal pelvis at least.

What, then, shall be done when we find ourselves literally face to face with such a complication? All manner of attempts have been made to rotate the chin forward, so as to remove that interlocking obstacle, the protruding thorax of the child, from the prominent rim of the posterior part of the inlet. But, unfortunately, the forces of the mother are generally faulty in these cases and do not encourage any tendency in the proper direction. The presenting face is swollen and deformed, the contour of the head not favoring the change to other diameters of the canal.

I will not consume time by rehearsing the various means which have been suggested and tried again and again with but very unsatisfactory results. The object of this paper is to come directly to the consideration of a means employed by me successfully in two cases of well-marked face presentation with the chin posteriorly, in which rotation to the front was practically out of the question.

It may be described in a word as "version by the vertex within the pelvis"—a direct conversion, by flexion, of a face presentation into a normal vertex position. For many years I had believed in the possibility of this manenver, it having been suggested to my mind while operating with the unassisted hand in difficult cases of occipito-posterior positions of the vertex. Noticing the comparatively unoccupied spaces in the lumen of the pelvic canal in certain positions of the head, it seemed reasonable to expect that, by properly directed forces, we might succeed in making use of these spaces in a manipulation which would cause the chin to ascend and the occiput to descend. The revolution of the head would consist essentially of flexion—the head being turned through an arc of about sixty degrees, upon an axis passing through the base of the skull.

I found on consulting the literature of the subject, that Cæsaux had considered such an operation as possible; and Hodge very clearly stated that such an operation ought to be successful in some cases. Yet neither of these obstetricians had put it into effect. Others have denied the practicability of such an undertaking, and have put it aside as a means not to be looked upon with any favor. And the common teaching has been, in case of failure, to rotate the chin forward, or to extract the head directly in its vicious position by violent forceps-traction—to resort to the mutilation of craniotomy. Encouraged by the very clear presentation of the problems by Hodge in his description of the mechanism of labor in these head cases, I determined to attempt the operation here submitted for your consideration at the first opportunity offering.

The patient being under full chloroform anesthesia, the hand is passed carefully in the vulva, with the outside hand seizing the body of the child. In the entire absence of uterine contraction the chest is pushed as much away from the pelvic brim as possible from the point toward which the chin is pointing in the direction of the occiput, that is, pushing obliquely from behind forward. At the same time the fingers of the vaginal hand are pushed up alongside of the head in one or other of the oblique diameters of the pelvis, so that they can reach the suboccipital portion of the head. The thumb at the moment steadies the brow, and, with a slight lifting motion imparted to the whole head, it is caused to rotate on its axis as described, the chin passing upward above the sacro-ischiatic notch as the occiput is drawn down below the pubis. Flexion may be considerably hastened by pressing down the occiput by the outside hand as soon as the face is dislodged from its wrong position.

It is easy to conceive of cases in which the disproportion between head and pelvis may be such as to present practically a relatively contracted pelvis; and in such a case there may be insufficient room for the hand. But the two following cases will illustrate the usefulness of the method in a certain proportion of cases which are involved in serious dangers and difficulty. To be able to convert these formidable presentations into normal occipito-anterior positions of the vertex is surely a most desirable object, and even in case of failure the case is none the worse for the attempt and may then be dealt with according to other methods.

In the fall of 1892 I was asked by Drs. G. H. and E. L. Cocks of New York to assist them in a difficult case of face presentation in which they had made well-directed and skilful attempts to rotate and deliver. I found a young woman, below the average in build, in labor with her first child. She had been in labor many hours, the waters were completely discharged, and the face was jammed down to the bottom of the pelvis with the chin to the right posterior portion of the canal, about opposite the sacro-ischiatic notch. All attempts to dislodge and rotate the chin forward had failed utterly, and I determined to institute the proceeding above described. As soon as the uterus was completely

relaxed I introduced my right hand and accomplished the manipulation which has already been given in detail. This was done with comparatively little force, not one-third the exertion used in ordinary attempts with forceps. The head was revolved within the straits upon its own axis, and within five minutes a normal occipital position was secured, and the case terminated without the slightest accident to mother or child. I reported this case to the New York Obstetrical Society in November, 1892. The pelvis in this case was apparently below the average in most of its diameters—especially in the conjugate—and the child weighed 7 pounds 6 ounces.

In October, 1899, I attended a patient in labor with her first child. The waters had begun to be discharged and external palpation, which was not altogether satisfactory, showed the dorsum of the child to the left anteriorly. Vaginal examination showed apparently a left sacro-anterior breech presentation, but as there had been no meconium discharged, I took pains to identify the land-marks more thoroughly. It was then made clear that I had a face to deal with which was well engaged in the middle of the canal with the chin at the right sacro-iliac junction. Discovering the situation thus early before the face had become at all jammed or distorted, I was enabled easily to accomplish perfect adjustment of the head into the left occipito-anterior position by the means described in this paper. My success in the first-mentioned case gave me full assurance that this was the best assistance I could give the patient, and the results proved its efficacy. The child was born spontaneously after normal expulsive labor, and weighed 8 pounds 12 ounces.

It will be noted that in the first case, a primipara, the face was wedged down upon the floor of the pelvis and had been arrested for a considerable time in this position, that the pelvis was *not* large, indeed, was short in some of its measurements, and the child not small, thus presenting a decidedly difficult combination. In the second case the conditions were much more favorable, owing to the earlier diagnosis and to the fact that no previous attempts had been made at delivery by other means, and yet in this case the child was unusually large. The pelvis in the latter case was about of average dimensions, the previous births having been fairly severe with normal presentations in each. Finally, that both children were born alive and in good order, and the mothers were delivered absolutely without injury or accident.

The difficulty of seeing a large number of cases of face presentation makes it impossible to estimate closely the proportion of such as are suitable for the operation herein submitted to the obstetric profession; but it is hoped that the description of this method, and its usefulness as illustrated in the two patients alluded to, may induce others to resort to it, with the assurance of confidence that version by the vertex within the pelvis is possible and practicable. And, by this means, I trust we shall in many cases be able by this harmless and rational correction of a faulty mechanism to substitute a normal delivery for an odious and unhappy mutilation.

29 East 126th Street.

CLINICAL MEMORANDUM.

ACUTE TRIONAL INTOXICATION.

BY WARREN COLEMAN, M.D.,
OF NEW YORK;
INSTRUCTOR IN CLINICAL MEDICINE AND MATERIA MEDICA AND THERAPEUTICS IN CORNELL UNIVERSITY MEDICAL COLLEGE; ASSISTANT PHYSICIAN TO BELLEVUE HOSPITAL

IN the MEDICAL NEWS of April 14, 1900, Dr. Wilcox speaks of the dangers attending the employment of trional as an hypnotic, without, however, detailing the nature of these dangers. In the reported cases of trional poisoning the symptoms are stated to be, in general, an exaggeration of its physiological actions, *viz.*, vertigo, loss of equilibrium, and ataxia. Other symptoms have appeared, however, such as nausea, vomiting and diarrhea, stertorous breathing and cyanosis, tinnitus aurium and hallucinations, and hematoporphyrinuria. Cases of poisoning by trional, however, are not of frequent occurrence, or, if so, they have not been reported.

As the result of an extended use of the drug for four or five years, both in hospital and private practice, I have come to look upon trional as one of the most efficient and safest hypnotics we possess. I have yet to see a dangerous symptom attending its administration, and my usual practice is to give it in fifteen- to thirty-grain doses, repeated at half-hour intervals, until a total of three doses has been taken, or the desired result obtained. The third dose has rarely been necessary, except in intense alcoholic intoxications. Trional sleep is not a narcosis, but a condition closely resembling natural sleep from which the patient can be readily aroused. Nor is its use attended by unpleasant after-effects. Only exceptionally does the drowsiness extend over into the next day.

In only one instance have I seen evidences of trional poisoning. Last fall a woman, about thirty-five years of age, suffered from a mild delirium brought on by excessive indulgence in alcohol, chiefly champagne, extending over a period of several days. Six fifteen-grain powders of trional were ordered, with directions to take one every half-hour for four doses, if necessary. The patient's friends were instructed to send word if further attentions were necessary. On the third day thereafter I was sent for. The patient was found in a somnolent condition from which she could be easily aroused. There were no disturbances of respiration or circulation that could be detected by an ordinary clinical examination. In answer to questions she replied that she was "dizzy and sleepy." Her speech was thick and her gait ataxic, although she walked with but little difficulty. She showed no

sensory disturbances. There was no hematoporphyrinuria.

Upon inquiry of the woman herself, and subsequently at the drug-store where the prescription was filled, it was found that she had taken *nine drams* of trional in seventy-two hours. The original prescription had been repeatedly filled. (It is but just to the proprietor of the drug-store, however, to say that he was unaware that the powders were for the same person, and that he declined to sell others when he discovered it.)

In a review of the reported cases of trional poisoning, none is found in which so large an amount of the drug has been taken. Aside from the administration of a large dose of a saline purgative to remove any of the drug that may have escaped absorption, no treatment was adopted. That afternoon the patient was ordered to take a drive in the Park, and no further symptoms developed.

In view of the above case, it would certainly seem that trional is devoid of any markedly depressant action on the circulatory or respiratory functions. Of course, it is unwise to generalize from a single case. That the circulatory system is not depressed to any great extent by trional is substantiated by the results of animal experimentation. On the contrary, the pulse-rate is at first accelerated, although subsequently it is slightly depressed, and when death occurs it is from respiratory paralysis.

Bellamy,[1] in a study of the action of trional in alcoholic delirium, concluded that the drug had a stimulant effect in the majority of cases, possibly because of the presence of the methylic and ethylic radicals in its molecule. In one of his cases 185 grains were given in twenty-four hours, not only without deleterious, but with distinctly beneficial results.

No account is taken in this report of the use of trional extended over long periods of time. The report is made only to show that trional is free from depressing effects when given in maximal medicinal doses, and that even when enormous doses are taken through accident, they do not necessarily produce a fatal or even an alarming result.

5 West Thirtieth Street.

[1] N. Y. Med. Jour., July 21, 1894, Vol. 60, p. 72.

MEDICAL PROGRESS.

Gall-Stone Removal by the Duodenal Incision.—Mr. F. Page (*Lancet*, June 30, 1900, p. 1885) states that chronologically this operation was done in order by McBurney, Kocher and Mayo Robson. Of the 15 recorded cases 20 per cent. died. The operation is very useful in impaction of the calculus behind the duodenum. The history of his case is: Female, aged 59 years, for past 2½ years subject to severe prolonged attacks of pain about the gall-bladder and extending toward the umbilicus, or when intense into the back, accompanied by vomiting and chills, the latter often preceding the pain. Recurrences came every two weeks or so. Three months before admission she became jaundiced during an attack and had remained jaundiced ever since. The urine contained bile. The gall-bladder could not be felt. The details of the operation were: (1) Lineal vertical incision about the region of the gall bladder, (2) calculus among adhesions about the head of the pancreas. The adhesions prevented approach through any other avenue, hence (3) the second part of the duodenum was incised and then the common duct opened till the stone was reached. This cut in the duct was never repaired. (4) The duodenal wound was closed as follows: a continuous line of catgut sutures piercing all the coats of the intestine was first put in. Then a continuous fine silk peritoneal-coat line followed by a few Lembert sutures. The parieties were closed by layer sutures. Complete recovery followed a brief attack of bronchitis.

Strangulated Femoral Hernia.—Whenever volvulus occurs, states Mr. R. L. Knaggs (*Lancet*, June 16, 1900, p. 1726), some cause is present to maintain the abnormal position, otherwise the gut will untwist, such as the weight of fecal matter, inclusion of part of the volvulus in a hernial sac, etc. He cites the following case in illustration: Female, 61 years; truss for left femoral hernia for years; admitted to the Leeds General Infirmary Jan. 6, 1900: six days previously irreducibility set in; severe pain; vomiting; intestinal obstruction; three days before admission was advised but refused to go to the hospital; on admission tumor was orange-size, ill-defined, very tender; overlying tissue red and edematous; pulse 100; tongue moist. At the immediate herniotomy appeared a sac empty of fluid, gangrenous, adherent to a loop of dead small intestine also empty and absolutely occluded at the ring. Thorough cleansing of the field was followed by division of Poupart's ligament to expose the small intestine. The loop in the sac was the larger part of a small volvulus, whose neck was just within the abdomen; twist of 180 degrees from right to left; distended bowel filled the pelvis, flaccid bowel coursed up the psoas muscle; the upper was superficial to the lower segment of the neck; relief of the twist; resection of the dead bowel; ablation of the gangrenous sac; drainage; suture. Vomiting and obstruction ceased, but by cardiac failure death occurred 36 hours later. At the autopsy there was no peritonitis; the resection wound was sound; the kidneys were in advanced nephritic condition.

Perforating Gastric Ulcer.—Upon the diagnosis of this disease, J. F. Finney (*Annals of Surgery*, July, 1900, p. 1) makes the following points. Previous dyspepsia (present in 92 per cent. of all cases), hematemesis, sudden pain in the abdomen with more or less indication of peritonitis, are the best elements in the history. The differential diagnosis rests between ulcer of the

duodenum, visceral colic, appendicitis, acute dilatation of the stomach, hemorrhagic pancreatitis, acute poisonings, uremia, intestinal obstruction, pelvic hematocele, cholecystitis, biliary and renal calculus, etc. Expectant treatment can be counted on as erroneous. Successes with it have usually been when the diagnosis is false. Radical surgical treatment is the only promising procedure. Opium is not to be given unless we are certain of the diagnosis and then only sparingly, as it promotes intestinal paresis. In general it is advisable not to wait for all shock to disappear, but under stimulation to operate early in the hope of circumventing the peritonitis. Where the clinical picture is obscure and the diagnosis of intra-abdominal lesion alone is certain, but its nature not, an exploratory incision under cocaine is always advisable. Rapid thorough exploration of the stomach must be made—the cardia, anterior wall, lesser and greater curvatures, pyloris, and posterior surface. Often more than one perforation exists, consequently one must be sure there are no more after having found one. The lesser peritoneal cavity and all the recesses of the greater must be examined as routine procedure. A bank of sutures turning the ulcer in is the best usual treatment of the lesion itself, although cutting the ulcer out may be done. Adhesions already formed had as a rule best be respected. When the ulcer is inaccessible for good suture, drains down to it of gauze or of tubing, plugging it with a twist of omentum or a knuckle of gut, incision of the anterior gastric wall to reach it if on the posterior aspect, are all worthy of trial. Care to avoid kinking and stricture is the sole precaution. Post-operative distention usually yields to lavage enemata, or cathartics or counterirritation. Rectal feeding cautiously followed by fluids in small quantity by mouth is the method of alimentation. The common complications, each with its own management, are intestinal obstruction from kink, parotitis, phlebitis, subphrenic abscess, pneumonia and empyema. The prognosis rests upon several factors, the emptiness or fulness of the stomach, the site and number and size of the ulcer, the rate at which the gastric contents are evacuated, the position (erect or horizontal) of the patient at the moment of perforation. As a rule the early operations give the best outlook. Hence the importance of early diagnosis, prompt treatment, and expert technic.

"Cross-Eye" and the General Health.—So delicate and complicated are the mechanisms and adjustments of the eye that it is not at all strange that so few people have really perfect eyes. A. L. Ranney (*Med. Rec.*, July 21, 1900) has given a detailed description of the different types of squint which occur and the many tests which are used to detect them. So far as their influence upon the health of the patient is concerned he concludes that (1) a small percentage of patients in whom cross-eye exists owe their trouble to errors of refraction alone, and the extreme nervous phenomena which may be present can be entirely cured by the use of proper glasses. (2) Extreme and constant disfigurement, not the result of refractive errors, does not as a rule entail eye-strain or tend to create reflex nervous disturbances. (3) Those who suffer only occasionally from cross-eye and show no cast at other times are peculiarly liable to reflex diseases. They are constantly on the border-line of double vision and are wasting nervous force endeavoring to maintain binocular single vision. (4) Extreme convergent or divergent squint is sometimes due to the fact that both eyes are adjusted too high or too low in the orbit, a condition which has been recognized by oculists only recently. (5) Some patients are unconsciously able to adjust for very high degrees of "latent" squint and actually to maintain binocular single vision most of the time. Severe nervous troubles are very common in this type of patients for the maladjustment of the eye-muscles is very apt to be overlooked on account of its inconstancy. When present it may be attributed to physical debility or excessive use of the eyes. A person who has never had binocular single vision (as a result of cross-eye) is liable to be greatly annoyed by double images if an operation is done which brings the eyes only approximately to their normal position. Previously the patient has learned to disregard completely one of the images, but when the images are seen close together or overlapping the nervous strain is much increased and the effect upon the general condition may be very marked.

Syphilis of the Brain.—J. F. Eskridge (*N. Y. Med. Jour.*, July 14 and 21, 1900) has written an extended and thorough article upon syphilis of the brain. The condition may be either acquired or inherited. He believes that about twelve per cent. of those who have tertiary syphilis show brain symptoms of syphilitic origin. It is impossible to say how long after the initial lesion the symptoms are apt to develop, for the length of time is very variable. Inflammation of arteries and degeneration usually appear from the fifth to the twelfth year after infection, but gummatous inflammation of the membranes often appears much earlier. It is never possible to say that the length of time since the chancre was contracted is so great that there is no longer any danger of brain symptoms. It is very probable that many toxic substances, especially alcohol, have a tendency to give rise to syphilitic lesions of the brain in an infected subject. There are two kinds of lesions, *viz.*, those which are specific lesions occurring as a direct result of the syphilitic poison and which are especially remediable by specific treatment, and those numerous injuries caused by the presence of specific lesions, or degenerations due to toxemic or other blood states which respond tardily or not at all to antisyphilitic treatment. The tendency of the gumma is always toward caseous or fibrous degeneration and it never becomes highly organized. They

are most commonly found at the base of the brain, on the cortex, sometimes in the pons. Gummatous inflammation of the pia and dura is the most frequent specific intracranial inflammation. The non-specific lesions result from the cicatrices and fibrous tissues which the gumma may induce and leave behind after its absorption. The nerves are compressed and degenerated, the membranes thickened, the arteries sclerosed and scars left in the brain. These lesions do not respond readily to treatment. The arteries of the brain are a frequent site of syphilitic inflammation which may be a general sclerosis or a gummatous deposit involving especially the inner coats. Later two non-specific lesions follow, *viz.*, the blood-clot that completes the occlusion and the necrotic softening of the brain to which that vessel was distributed. One of the marked features of syphilis of the nervous system is the irregularity and multiplicity of the symptoms. Two or more grave conditions may be present at the same time. Since the meninges are a favorite site for the lesions, we should expect to find headache a prominent symptom and also the disorders of sleep which go with it. The base of the brain being so frequently involved accounts for the many cranial-nerve symptoms which are so common. Deposits upon the cortex cause motor disturbances, as Jacksonian epilepsy or mental defects. Syphilitic inflammations of vessels do not usually cause much headache. The earliest symptoms of this condition are slight dizziness, especially when the head is moved suddenly, absent-mindedness, loss of ambition, going on to apathy and dementia. It is interesting to know whether the tertiary stage can ever give rise to headache in the absence of intracranial syphilis or in the absence of the virus in the blood. The author does not think this possible except as a result of the impoverished state of the blood and this would not differ from the headache of an anemia. We may, however, have headache both in the secondary and tertiary stages due to the presence of the virus in the blood, but this readily yields to treatment. Headache due to syphilis with organic changes is usually worse during the latter part of the day and in the evening than in the morning, not because it is syphilitic, but because it is due to organic changes within the cranium and attended by inflammation. Any headache due to brain tumor is influenced by diurnal changes. When the headache is due to an inflammation of the meninges the pain is very severe and almost constant, and when the dura of the vault is affected, tenderness on pressure is present. The history of the initial lesion is often difficult to obtain and great care must be used to detect secondary symptoms. Absence of secondary manifestations in persons who have suffered from a chancre is in favor of the nervous system suffering in the tertiary stage, if this is ever reached. Mickle gives the general prognosis as follows: One-fourth recover; one-fourth improve greatly; one-half die or exist with grave brain lesions. The lesion which gives the gravest prognosis when well advanced—syphilitic arteritis—is the most amenable to treatment if this is instituted early. The treatment might be divided into prevention, general management of the patient and antisyphilitic medication. The prevention is best secured by the use of potassium iodide in ten-grain doses thrice daily for periods of two weeks three times per year. Long-continued large doses are liable to injure the general health of the patient. So far as the antisyphilitic medication is concerned, the only guide to the choice between potassium iodide and mercury is the activity of the process. The greater the activity of the disease the greater the demand for mercury. Potassium iodide does more good in the chronic cases, but both drugs are usually helpful, the combination depending upon the above conditions. Early specific treatment is strongly urged since the non-specific intracranial lesions due to syphilis will not yield to specific treatment.

Unusual Complication following Gastrojejunostomy.—W. H. Brown (*Lancet*, July 7, 1900) relates the following incident: His patient was sixty-two years old and much reduced by pyloric obstruction. A gastrojejunostomy was the palliative resorted to. For two weeks the patient did well, then renewed all the previous symptoms of pyloric stenosis and their consequent emaciation. The diagnosis was made of occlusion of the new opening. Although the patient appeared utterly exhausted a laparotomy was done. Externally the anastomosis was perfect. Internally through an incision in the gastric wall the semis plates were found gone and the opening covered by a thin membrane. This was torn through and the opening dilated. Complete recovery then followed.

Spontaneous Peritonitic Evacuation.—J. R. Wallace (*Lancet*, July 7, 1900) reports a case of peritonitis diagnosticated tuberculous, treated medically in the Home Hospital, Calcutta, with marked improvement and discharged as benefited fifteen days after admission. Three days later she returned with all the symptoms of acute abscess about the umbilicus. This burst spontaneously, evacuated twenty-four ounces of pus and then healed quickly. Recovery followed at once. Fourteen months later the patient's general health was absolutely good.

Rubber Gloves in Surgery.—E. Wormser concludes that the indications for gloving the hands (*La Semaine Médicale*, June 20, 1900) are mainly two; first, the protection of the surgeon's hands from septic material, it may be in his own interests or in the behalf of patients who follow; second, to preserve the wound and operative field from infectious material already on the surgeon's hands, perhaps from very recent contact or from inoculation within the previous forty-eight hours. It has been abundantly proved that a hand once infected cannot be made ideally sterile less than two days thereafter. Here perhaps all surgeons are agreed that the greatest indication to be ful-

filled is to keep the hands protected from contact with all septic material and hence to wear gloves with that end ever in view. Kocher states this fact thus: Gloves should be worn practically all the time and removed only when operating. Furthermore, the practitioner who is face to face with an obstetrical or surgical case, unable to sterilize his hands at all in virtue of the emergency or the circumstances, or on account of small wounds, cuts, abrasions or an eczema not able to do it well, will find the use of absolutely sterile rubber gloves most convenient and safe. The military surgeon may not have water to render sterile and use to disinfect his hands, but he can easily put on rubber gloves, which from now on should not be absent from the complete equipment of the field operator. To sum up the entire matter the following appear to be the conditions under which the rubber glove is proper or necessary: (*a*) Protection of the hand of the surgeon. (1) Examination of the rectum (finger-stalls may be substituted for the entire glove), of suppurative wounds, of decomposing cancerous tissue, of puerperal-fever cases, of septic abortion patients, of erysipelas, etc. (2) All septic operations of which the above are a few examples. (3) Anatomical procedures, especially autopsies. (4) Cutaneous diseases or conditions which render inoculation of the surgeon himself likely; for instance, sepsis, syphilis, or tetanus. (*b*) Preservation of the operative field and wound. (1) Operations undertaken less than forty-eight hours after contact with toxic matter. (2) For the completion aseptically of cases made septic by some accident in the course of the technic (soiling of the hands by intestinal or abscess contents, etc.), thereby making ligature and suture placing aseptic. (3) Intervention in cases where no time for scrubbing up is afforded (tracheotomies, obstetrical hemorrhage, etc.). (4) Any affection of the hand hindering asepsis (fissures, pustules, cuts, eczema, etc.). This list, though not complete, shows a wide field of usefulness for the rubber gloves. The conclean cases. To render the service best of all, others have his armamentarium provided with them, sterilized by simple boiling or one of the more ornate methods and carefully done up in a suitable dressing. It is he who from moment to moment is in contact with septic material and clean cases. To render the service best of all, the druggist of the small place should keep them in stock for the practitioner's call. It is also true that the rubber glove fulfils a great need for the hospital surgeon in his various service and frequent opportunity of carrying infection from patient to patient.

Porro-Cæsarean Operation.—W. J. Gillette (*Med. Rec.*, July 21, 1900) records the history of a primipara, whose family and personal history had no bearing on the details of the case; menstruation was established at her seventeenth year without any subsequent irregularity; ten months ago a small tumor was discovered on the anterior wall of uterus; aside from occasional pain in the back her pregnancy gave her no trouble, until labor began, when it was seen after forty-eight hours of dry labor that the fetus had not descended. Examination revealed a fibroid tumor, the size of a child's head, so completely blocking the pelvic outlet that the cervix uteri was with difficulty felt; all attempts to raise the tumor out of the pelvic cavity were futile, so that an operation was necessary. Although the labor had been in process sixty hours, the patient was in good condition for operation. A median incision in the abdominal wall made the relation of the tumor to the uterus clear, the tumor being connected to the posterior wall of the uterus, near the fundus, and attached by a pedicle the size of the wrist. The tumor occupied such a position and was so impacted in the pelvis that it was impossible to deliver it or the uterus before the child was removed; nor was it possible to place a rubber ligature around the cervix to control hemorrhage; hence the only possible procedure was the incision of the uterus *in situ*. A living fetus, weighing seven and three-fourths pounds was removed after the umbilical cord had been clamped and severed; the uterine bleeding was controlled by an assistant's hands compressing the incised walls of the uterus against the abdominal walls; the placenta was removed without difficulty. The fibroid tumor was now with difficulty enucleated from its position in the pelvis, where the adhesions were abundant; the uterus was brought out of the abdomen and a rubber ligature placed around the cervix, after which the uterus was amputated; the stump was placed in the lower angle of the abdominal incision, and retained by two hysterectomy pins, the abdominal incision being closed with interrupted deep silkwormgut and buried catgut sutures, after the abdominal cavity had been washed out with a decinormal salt solution. The operation lasted forty-five minutes, and both the mother and child did well, the baby being placed at the breast as soon as the patient came out from anesthesia. The rubber cord was removed at the end of the fourth day, the pedicle coming away about the end of the second week; the patient made an uninterrupted recovery.

Prostatic Atrophy After Castration.—E. L. Keyes, Jr. (*Med. Rec.*, July 21, 1900), narrates a case operated upon by him in which the following facts obtained: A large glandular prostate; castration; a lapse of sixteen months; undiminished size of prostate to rectal touch; undiminished length of the urethra; undiminished persistence of the clinical symptoms; prostatectomy with shelling out of two solid tumors the size of pullet's eggs; failure by an expert to find any evidences, macroscopic or microscopic, of atrophy of the prostate. With this experience as a text, he proceeds to analyze critically all known data upon castration since its introduction by White, in 1893, as a specific for prostatitis.

He concludes that (1) experiments, whether

on man or the lower animals, relating to the normal prostate, do not of necessity apply to the enlarged prostate. (2) There seems to be no direct pathological evidence that castration has ever caused atrophy of a hypertrophied prostate. (3) There is direct pathological evidence that in a few cases castration has failed to cause atrophy of the hypertrophied prostate. (4) The majority of cases reported thus far have been labelled "cured" or "improved" so soon after operation that many of them are doubtless instances of local depletion. (5) Clinical evidence of this is afforded by relapses occurring months after the operation. (6) Of the permanent cures, some may well be instances of permanent advantage derived from reduced congestion. (7) The clinical evidence as to the actual atrophy of the prostate after castration lacks as yet its scientific confirmation and has failed thus far to prove its title to the credence of the surgeon.

Primary Appendicular Carcinoma.—A case of this rare affection is reported by H. D. Rolleston (*Lancet*, July 7, 1900) as follows: Woman, aged twenty-six years, admitted to St. George's Hospital, March 26, 1900, during fourth attack of appendicitis; initial attack January, 1899; easy appendectomy next day; one small adhesion of the tip of the organ to the uterus; prompt recovery; loss of flesh and strength with obscure abdominal pain four months later, apparently from secondary deposits. The removed organ had the following features: Near the tip a globular marble-sized mass, springing from the mucosa, obliterating the lumen, having caseous consistency and suggesting tuberculosis; its mesentery and that of the intestine presented no enlargement of lymph-glands and no extension by continuity. Microscopically the mass was a spheroidal-celled carcinoma, primary in the mucosa, chiefly confined thereto, but involving the muscularis and serosa also, although no growth had appeared on its abdominal surface. These relations to the coats of the organ proved that it originated in its substance, not implanted from without, and not lodged there by embolism. This affection is a medical rarity. Many high-class modern text-books omit it. Lafforgue collected nine cases in literature. Mosse and Daunie found one in a woman of fifty years without special symptoms. This growth was columnar and transitional to spheroidal-celled carcinoma. Lutelle and Weinberg in twelve histological examinations of obliterative appendicitis found two strongly suggesting carcinoma. Wright has described a perforative fatal peritonitis due to ulceration of a columnar-celled carcinoma close to the base of the appendix, and Thiersch another of the cecum proper. Warren and H. Gilford each report a sarcoma. Very likely two reasons account for the great rarity of the disease in literature, *viz.*, absence of systematic examination of all appendices removed, and absence of clinical symptoms until, by involvement by contiguity of the bladder, the uterus or some organ, the original focus is overlooked. The symptoms when present are those of appendicitis, or, as in Wright's case, of perforation and peritonitis. The growth seems either to excite inflammation, or, as in the gall-bladder, so like the appendix in many ways, to be the product of inflammation. It might be well to examine the appendix in all cases of multiple carcinomata of the liver, not that the primary lesion should exist so long without signs, but that carcinoma may be present in the organ removed previously for appendicitis.

Phenacetin: Its Physiological Action.—Considering the length of time phenacetin has been in use and its value as shown by clinical experience, a knowledge of its physiological action is wonderfully lacking. Horatio C. Wood, Jr., and H. B. Wood (*Univ. Med. Mag.*, July, 1900) cite a number of experiments made by different investigators and describe a few of their own. The conclusions which they arrived at are as follows: (1) The moderate dose of phenacetin is without distinct action on any vital organ. (2) Large doses lessen reflexes by direct action on the spinal cord. (3) Doses of 0.5 gm. per kilo of body weight (equivalent to a little less than one ounce for a 150-pound man) kill by arrest of respiration. (4) Doses even up to 0.5 gm. per kilo have no distinct effect on the circulation.

Tuberculosis of the Skin.—Some extremists assert that residence of the tubercle bacillus in cattle so changes its character that its pathogenic power is lost for man, and *vice versa*. Mazyck P. Ravenel (*Phila. Med. Jour.*, July 21, 1900) says that such an opinion cannot be supported by a single observation, and he reports five cases—three in detail—of tuberculosis of the skin due to inoculation with the bovine tubercle bacillus. In these cases the inoculation was accidental and occurred during autopsies on tuberculous cows, the initial lesion in each case consisting of an abrasion on the knuckle from contact with the broken end of one of the cow's ribs. The result in each case of this inoculation was a small nodule showing an inclination to break down, or to remain unhealed. These nodules were excised in each case and examination showed that they were undoubtedly tuberculous. In four of the cases the lesions resulting from inoculation were local and excision of the nodules brought about a cure, but in one case cited—that of L. Pfeiffer—the man died of tuberculosis of the lungs eighteen months after the inoculation in his thumb. The writer thinks that these five cases prove conclusively that the bovine tubercle bacillus is not devoid of pathogenic power for man, and that the indications are that by this method of inoculation the pathogenic power is at least as great as that possessed by the tubercle bacillus from human sources.

One Hundred Laparotomies Without Death.—These cases are consecutive and not selected, but had the advantages of perfectly-equipped hospital surroundings, says W. Duncan (*Lancet*, July 7, 1900). The diseases treated comprised fibroids of the uterus, cysts of the ovary, parovarium,

broad ligament, tubo-ovary, ventrofixation, ectopic gestation, pyo- and hydrosalpingitis, diseased appendages, ventral hernia and exploration. The features of the operations are: (1) Preparation of the field by scrubbing with carbolic soap and a 1-1000 wet dressing of bichloride of mercury for twenty-four hours. (2) The operator and assistants scrub their hands thoroughly and immerse for at least one minute in 1-2000 bichloride of mercury. During the operation the hands are washed as indicated in the same solution. (3) The instruments are carefully kept during the operation in plain boiled water and the silk in carbolic-acid solution. Only silk is used. (4) Sea sponges are used, instead of gauze pads, except when infective material is expected. All pads or sponges so soiled are destroyed and the former are the cheaper. (5) Flushing with plain sterile water is done only when a septic soiling has occurred, or when shock and hemorrhage indicate. (6) Drainage is avoided as much as possible by carefully stopping all oozing and great cleanliness. Rubber tubes or gauze are better than glass, and should remain in only twenty-four hours if possible. (7) The after-treatment consists in mouth-feeding, if possible, the day after operation, stimulation and turpentine enemata for tympanites.

Etiology and Cure of Hysteria.—A curious treatment has been reported for hysteria by F. Walter (*N. Y. Med. Jour.*, July 21, 1900). He says that if a massive culture of the colon bacillus, the original colony of which was taken from a non-infectious source, be administered to a case of hysteria of the active or convulsive type (latent or post-hysterical phenomena, such as paralysis, being excluded), the symptoms disappear in from twenty-four to forty-eight hours and the patient is restored to health so far as hysteria is concerned. The uniformity of the result would justify the placing of this remedy among the specifics. Two views are given in regard to the *modus operandi;* one assumes the existence of a specific organism causative of hysteria not to be differentiated by our present methods from the bacillus coli communis; the other is that in the intestinal tract of predisposed subjects the otherwise harmless bacillus may take on toxic properties. In either event the offending organism is simply displaced by the above method of treatment. From the stomach or intestine of the hog or other animal a culture is obtained and after a pure culture has been fully developed it may be scraped off and given in capsule. A well-matured growth will make about three to six doses, two or three of which should be given in twenty-four hours, care being taken that the growth is fresh.

Acute Rhinitis in Children. — Oppenheim (Medical Diseases of Childhood) advises first clearing the intestinal tract by means of one-tenth-grain doses of calomel followed by a mild cathartic. Warm baths relieve the general depression as well as the local congestion. The nasal cavities should be frequently sprayed with an alkaline solution or with one of boric acid, afterward using a soothing spray of an oily material, and smearing the end of the nose and whole upper lip with vaseline to protect them from the acrid nasal discharge. The food must be carefully regulated and the child taken into the open air as soon as feasible. Regular exercise, bracing baths and tonics should be prescribed to avoid recurrence.

Acute Follicular Tonsillitis in Children.—After the administration of calomel or a saline cathartic, ice-bags should be applied to the neck opposite the tonsils, and the throat sprayed frequently with a solution containing peroxid of hydrogen and boric acid. Phenacetin and salol, of each two grains, taken every two hours will soon afford relief. If there be a rheumatic tendency, salol, salophen or a similar preparation should be prescribed. Food is to be given only in small quantities, and of an easily digested kind.—*Oppenheim.*

Curability of Syphilis.—Tarnowsky (*Arch. Russes de Path.*) has published a report on a series of fifty cases of syphilis observed by himself, in most instances the appearance of the initial lesion in which complete cure appears to have taken place. The minimum period of observation is twenty years, the minimum time since the last syphilitic manifestation, sixteen years. All doubtful cases, presenting complications, such as aortitis, nephritis, etc., are eliminated. One man, sixty years of age, had a chancre in 1862 and some secondary symptoms, and has since then been free from symptoms. In the case of a man, seventy-nine years of age, fifty-five years have passed since he presented gummata of the face. In one case only the chancre had been the only sign of the disease; the other patients all showed secondary or tertiary symptoms. Of the 48 men and 2 women patients, 27 men and the two women married; out of 65 children, 56 exhibited no signs of hereditary syphilis. The patients belonged to the intellectual class and represented all varieties of professions. As they were all of robust health and all almost free from hereditary taint, Tarnowsky concludes that these points are factors in a favorable prognosis. In respect to treatment, 20 used mercury from the time of the chancre, two were given iodide treatment from the first, and 27 received no mercury until gummata appeared. Treatment was in general less extended than as advised by Fournier. From his study of these cases, Tarnowsky concludes that syphilis is curable, and urges that patients be encouraged to believe this, while not depreciating its gravity, in order to gain the advantage of their psychical good condition in promoting their physical recovery.

Naphtalin in Puerperal Endometritis.—Kirzner has made use of the energetic germicidal powers of this drug in overcoming the above disease and reports excellent results in cases in which no gen-

eral septicemia had developed. After drying the endometrium with dry tampons, or curetting in cases of retained placenta, he takes a long strip of iodoform gauze (3 per cent.), dips it into ichthyol-glycerin (1 to 8), squeezes it out, and powders it abundantly with finely-powdered naphtalin. This strip he then uses to tampon the uterus, leaving the tampon in position for from six to twelve hours. The temperature may be expected to fall to normal two or three hours after removing the tampon; the discharge loses its fetidity and recovery is inaugurated. If this does not occur, a second tampon should be inserted twelve hours after the removal of the first.

Complications in Pertussis.—The bronchopneumonia complicating pertussis which so frequently proves fatal is according to Lacomme and Mercier usually due to secondary streptococcic infection, although the pneumococcus or staphylococcus aureus may be the active agent. It is most apt to occur during the spasmodic period. Various methods are recommended for disinfecting the air passages, this being the most effective form of prophylaxis. A mixture of equal parts of benzoin and salicylate of bismuth with one-tenth part quinine sulphate is excellent for nasal insufflation. The throat may be swabbed with a two-per-cent. solution of resorcin, or osaprol five per cent. every two hours. Some writers urge direct treatment of the larynx by instillations of mentholated oil, 1 to 40. Baroux employs oxygenated vapor having a couple of sheets hung in the sick-room, and moistened every four hours with three ounces of peroxid of hydrogen (12 vol.). The spasmodic attacks are said to diminish in frequency and gravity under this treatment. Lacomme and Mercier recommend that the child's clothing, the bedding, etc., be freely sprayed with the following mixture which they call gallinacol.

℞ Ætheris sulph. ..... ℥xii
Ætheris acet. ..... ℥v
Spiritus 90 per cent. ..... ℥x
Salol ..... ℥iss
Ac. carbolici cryst. ..... ʒiv
Ol. lavandulæ. ..... ʒvi
Ol. gaultheriæ. ..... ʒvi.

M. Sig. External use.—*Maragliano.*

In addition, the nasal cavities and mouth should be disinfected as far as possible by means of boric acid insufflations and the use of an appropriate mouth-wash and dentifrice. Pure air, above all, is required.

Orthoform for Fissured Nipples.—*Bardet* recommends the following application:

℞ Orthoform ..... gr. lxxx
Ætheri's q. s. ad. sol. .....
Ol. amygdal. expr. ..... ʒv.

M. Sig. External use.

This causes a burning sensation for one or two minutes, followed by anesthesia.

Blondel prefers a saturated solution of orthoform in 40 per cent. alcohol, a few drops of which are allowed to fall into the fissure. This should be done half an hour to an hour before each nursing to insure the maximum effect at that time. No injurious symptoms are observed in the child, and the mother is greatly relieved.

The Leucocyte Count in Surgery.—T. Dunham (*Annals of Surgery*, June, 1900, p. 669) elucidates the facts that leucocytosis may mean increase in the circulation through the body fluids or in the actual production of the bodies in the system. Their origin is still disputed, the bone-marrow, lymph glands and lymphoid tissue all receiving some credit for it. The normal conditions for leucocytosis are the activity of digestive processes, infancy, hemorrhage, after ether anesthesia, etc. The influence of ether in aseptic cases is to cause a rise, prompt and marked during the first twenty-four hours, in septic cases each patient is a law to himself, some showing a moderate rise, others a slight fall in the number. Upon the basis of one case moderate iodinism causes very marked leucocytosis. Carcinomata especially with metastases seem prone to cause leucocytosis, especially in ulcerating cases, perhaps owing to mild infection. Often in gastric cancer the "digestion" leucocytosis is insignificant or absent, usually present in gastric ulcer it again disappears in chronic gastritis in dilation and often in normal health. Sarcomata almost always show numerous increase in white cells, chiefly the polymorphonuclear neutrophiles. But the surgeon is most served in the blood-count of the acute inflammations, examples of which are adenitis, mastoiditis, empyema, cellulitis, abscess, ostitis, appendicitis, etc. When the leucocyte count is distinctly high and a suppuration is suspected it is well to make counts at regular short intervals to ascertain whether the leucocytosis is progressing or receding. In this way the time for operating in a case of appendicitis can be arrived at and also the condition of the field after operation followed. In severe cases of sepsis or prostration by any cause often the leucocytosis is negative. It is then that the qualitative characters are of most value. It seems well established that in progressive suppuration and not in any disease apt to be confounded with it, a larger or smaller proportion of polymorphonuclear neutrophiles stain with iodine. This is not the case with normal blood. In tuberculous or well walled-off indolent abscesses this reaction is absent, always in the former, usually in the latter. But if the suppuration starts up again the iodine reaction recurs. It is present in lobar pneumonia, pernicious anemia, secondary intense anemia, simulating the pernicious as in cancer of the stomach and leukemia. Beside this intracellular there is an extracellular iodine reaction among granules of débris, sparingly present in normal, often in suppuration abundant in bone fracture and hematoma cases. Of great value all these facts undoubtedly are, but only experience will show where the value begins and ends.

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SATURDAY, JULY 28, 1900.

MYXEDEMA AND CRETINISM IN THEIR MILDER FORMS.

THYROID therapy in myxedema and cretinism has been a bright chapter in modern medicine, for it is rare that a disease presents itself in so typical a manner and a cure is effected with so much certainty as in case of disturbed metabolism from thyroid insufficiency. The researches of Hertoghe, however, go to prove that the real scope of the discovery has not yet been thoroughly appreciated; that while myxedema forms a symptom-complex not to be forgotten, the overdrawn text-book type of the disease is reached by only a minority, and the intermediary stages are rarely recognized and treated. The thyroid stands in intimate relation with all organs of the body, and the symptoms resulting from its atrophy often concentrate themselves upon the one or the other organ without, however, leading to a general deterioration of mind and body so characteristic of myxedema.

The relation of the thyroid to the female sexual organs is especially pronounced; menstruation is attended with a transient or permanent hypertrophy of the thyroid; with pregnancy also there is an increase in volume; menorrhagia up to almost continuous hemorrhage, to be followed later by amenorrhea, is an almost constant feature of myxedema readily yielding to thyroid treatment, and during the nursing period the latter increases the size of the breasts and the secretion of milk. It is noteworthy that excessive menstruation from other causes, as well as from habitual abortion, often disappears after a course of thyroid extract. It seems, indeed, as if the development of the sexual organs and that of the thyroid gland, especially in the female sex, go hand in hand.

It would appear at first sight as if serious obstacles would be encountered in the diagnosis of what may be called benign hypothyroidism or partial myxedema, but these are materially diminished if the eminently hereditary character of the condition be borne in mind. Not only is it necessary to ascertain the exact size of the gland in the patient and his immediate relatives, but all other organs liable to be involved must be subjected to close scrutiny to detect any slumbering taint; the early life, puberty, menstrual history, pregnancies and puerperia of the mother and the condition of health of the sidelines of the family must be carefully reviewed. As a second means it is well to compare the intermediary stages in a fully-developed myxedematous patient on his way to health with a suspected case, for a close correspondence of symptoms will thereby be unveiled, and, thirdly, the therapeutic test which permits of a cure or a return of symptoms *ad libitum* will prove of diagnostic value.

The hypothyroidic patient generally belongs to the female sex, no doubt since the thyroid here suffers more drain from the greater complexity of woman's sexual phenomena. Extremely insidious in onset, the patient generally does not become aware of the slow undermining of her health, the more so since her relations are troubled with the same or allied symptoms which make her forget that what she feels is not part of her normal state of health, and, therefore, she complains but little. Alcoholism, poor social surroundings, intermarriage, venereal infections, and excesses of all kinds form the starting-point, for, whatever the malignant influence be, it first and foremost attacks the thyroid and with the advent of pregnancy, deprivation or other drain, a new factor is added which unreined exerts its ravages on a weakened soil. The patients often appear prematurely aged; canities and later alopecia, especially of the eye-brows, are noted manifestations. All epidermal structures seem to be

particularly vulnerable, so that malformation and caries of the teeth and spongy gums are not rare. An examination of the mouth shows enlarged tonsils and a hyperemic pharynx. The nasal cavities are narrowed and adenoids can be found in all degrees. Headache, migraine, tinnitis aurium, a dampened voice, and peculiar illusions of sight and hearing are present.

Turning to the sexual organs, it may well be said that many of the disturbances during pregnancy, so common as almost to be considered physiological, may be ascribed to lack of thyroidin in the system. Nor need one search further for the cause of the lassitude and loss of mental acuity which mark the period of lactation in so many patients. The author is even inclined to view the origin of retroflexions, myomata and excessive postpartum hemorrhages, in the same light. The patients live in an "eternal winter" for their bodily temperature is much diminished; hence come articular and muscular rheumatism, a constant complaint of soreness and cold feet. Premature senility of the vascular system leading to varicocele and dilated veins, an emphysematous condition of the lungs with a feeling of oppression and dyspnea, palpitations of the heart, a tendency to portal congestion and gall-stone formation, an obstinate constipation persisting from infancy to old age, general depression of mind with irregular and unrefreshing sleep—all these symptoms portray a condition of chronic illness and pitiable suffering. The picture is complex but the moral evident. The physician who keeps the possibility of thyroid-disease ever in mind will become more and more imbued with the prominent part it plays in medicine and will, by careful analysis of symptoms, very often be able to resort to organotherapy to alleviate suffering.

THE ELMIRA REFORMATORY.

Penology above all other sciences calls for practical men to carry its tenets into effect. The Italian school, of which so much has been written, has largely expended its energy in establishing the physical and mental status of the delinquent class, and can hardly be called more than a school of theory. In the practical application of reform methods to the criminal class this school has lacked soundness of judgment in directing its knowledge to practical ends. The German, English, and French systems are but little better than Italian imitations. It has really remained for America to set in operation the various factors of reform, and this has been done most notably and successfully in the New York State Reform School at Elmira.

It seems now, after the well-nigh marvelous successes of the past twenty years, this institution under the excellent management of Mr. Brockway is to be broken down, and Mr. Brockway, the pioneer of practical reform methods in the science of penology, is to be publicly disgraced by being compelled to resign from its superintendency. For some time this change has seemed probable to those closely acquainted with the new order of centralization of government at Albany. Every year has seen the dwarfing process of the energies of the local Board of Managers of the New York State Institutions steadily increase. This new era came into being when the last constitutional convention made the Lunacy Commission, Prison, and State Board of Charities common constitutional bodies, with almost complete control of the different State institutions. The unfortunate results of this centralization of power in the State Hospital service, has been well illustrated by the late suppression of scientific work at the State Pathological Institute of New York.

A law two years ago gave the Comptroller and State Board of Charities the power of regulating the salaries and wages of all State institutions not comprised in prisons and asylums, a power formerly vested in the Board of Managers of the different institutions. Last year the Comptroller and the State Board of Charities made a systematic and very nearly successful effort to stigmatize the management of all the State institutions which they visited, notably, the Elmira Reformatory and the School for Feeble-Minded Children at Syracuse.

Both the State Board of Charities and the Comptroller are empowered to inspect and supervise the working of such institutions; their power of harm in selecting incompetent men for such work has been shown by embarrassing and crippling these institutions, and they have tied many a worthy project hand and foot in red tape. The entire object of their annoyances in the instance of the Elmira Reformatory was to rid the institution of the valuable services of Mr. Brockway, and discredit the work of the Managers and Trustees to such an extent as to justify them in introducing and passing a law abolishing the local Board of Managers, and compelling the different institutions to report directly to the cen-

tralized power at Albany. This rule or ruin policy of the State Board of Charities and Comptroller has already paralyzed the good purposes of the medical and reform charities of the State, and should not be longer allowed to prevail.

ECHOES AND NEWS.

NEW YORK.

Antipremature Burial Society.—Incorporation papers of the American Society for the Prevention of Premature Burial have been sent to Albany. The members of the society are: Clark Bell, Dr. Thomas Darlington, Dr. Henry J. Garrigues, Assemblyman Cyrus B. Gale, and H. Gerald Chapin.

Dr. Brockway and the Elmira Reformatory.—Rumors with regard to the New York State Reformatory and the possible retirement of Superintendent Brockway are numerous. Dr. Frank W. Robertson the resident physician, is now mentioned as Brockway's successor, with P. J. O'Donnell combining the positions of principal keeper and assistant superintendent. It is said that Dr. Brockway will assume a position in a reformatory of another State in an advisory capacity, in the event of his resigning from the superintendency of the Elmira Reformatory.

Dr. Benedict Not Bishop.—In our announcement regarding the Pan-American Exposition [Medical News, July 14th] Dr. A. L. Bishop was named as the manager of the Department of Ethnology. Dr. A. L. Benedict is the manager.

Electrocution.—The execution of Mullin at the Sing Sing prison July 23d makes the thirty-fourth time the electric chair has been used for that purpose in that institution. One shock produced death. The voltage was continued for only one minute.

Awards of Prizes.—The State Board of Regents has received an announcement of awards made to the United States in the third class of the educational exhibits at Paris, which included about 900 exhibits of higher educational and scientific institutions. In the awards to the United States the University of the State of New York received grand prizes for these exhibits: Museum, paleontological reports, library, traveling libraries, home education, college professional education in the United States. Gold medal awards were given New York State exhibits made by Columbia University, Cornell University, section of civil engineering, and Vassar.

Commissioner Simis' Death.—Commissioner Adolph Simis, Jr., of the Department of Public Charities for the Boroughs of Brooklyn and Queens, died in Brooklyn July 22d. It is understood that Hugh McLaughlin will have the naming of a successor to Mr. Simis. The choice will probably be between Edward Glennen, the present deputy, and Arthur A. Quinn, who was removed from that place about a year ago by Mr. Simis. The salary of the position is $7,500 a year.

Contagious Diseases.—For the week ending July 21, 1900: Measles, 120 cases and 23 deaths; diphtheria, 154 cases and 29 deaths; laryngeal diphtheria (croup), 3 cases and 2 deaths; scarlet fever, 60 cases and 5 deaths; chicken-pox, 5 cases; tuberculosis, 236 cases and 181 deaths; typhoid fever, 26 cases and 11 deaths; cerebrospinal meningitis, 9 deaths; total, 604 cases and 260 deaths.

Hospital Appointments.—Drs. George E. Brewer and J. A. Blake have been appointed junior surgeons to Roosevelt Hospital, with continuous service, and Dr. Walton Martin has been appointed attending surgeon to the Outdoor Department.—The vacancy produced at Mt. Sinai Hospital by the resignation of Dr. Brewer has been filled by the appointment of Dr. Charles Elsberg as assistant attending surgeon.

Success of American Sprinters Accounted For.—An ambulance from Roosevelt Hospital last Monday dashed down Twenty-sixth Street at an unusual rate of speed even for a New York ambulance, and following it as a close second came the electric ambulance from St. Vincent Hospital. The cause of all this excitement was the approaching arrival of two babies who threatened to be born upon the run, a boy and a girl. The boy won and announced his arrival one minute after reaching the receiving-room. Losing the race to the Roosevelt ambulance caused the birth of the little girl before the St. Vincent ambulance could back up at the receiving ward door. Both mothers and their babies are doing nicely.

PHILADELPHIA.

Tetanus.—Two deaths from tetanus were reported during the last week. It is rather curious that both should have been caused by nail wounds of the foot when the hundreds of Fourth-of-July wounds did not produce a case.

Sanitarium.—The Children's Sanitarium at Red Bank, several miles down the Delaware, is doing its usual good work toward relieving the evils of hot weather. From June 7th to July 14th, 85,319 persons were carried by the steamers free of charge. Many of the number were mothers of children too small to go alone. Soup, milk, and biscuits are furnished to every one at noon.

Institution for Colored Cripples.—The House of St. Michael and All Angels is an institution in this city for the surgical treatment and industrial and religious training of young colored cripples. The institution issues a periodical known as the *Cripple News*. Treatment is free and the enterprise, the first of the kind founded, is wholly supported by charitable bequests.

Broken Neck.—Louis Vogel, aged twenty-one years, is at the Samaritan Hospital suffering from a fracture of the fourth cervical vertebra. The injury was received July 4th by falling from a tree. Vogel is entirely paralyzed from his neck down, but retains consciousness and is quite cheerful. Liquid food is taken and digested and the man's condition seems to have slightly improved of late.

Asylum Abuse.—The County Commissioners of Berks County, after inspecting the Harrisburg Insane Asylum, say that too many people are sent to the State asylums. In their opinion many of the people whom the law pronounces demented could be cared for at home, as they are not violent in any way. Many families are anxious to get rid of members who are "peculiar." Under the present regulations these cases are pronounced demented and sent to the asylums, thus leading to the overcrowding of these institutions.

Health Report.—Deaths in the city for the week ending July 21st were 564, a decrease of 69 from those of last week. Of these deaths at least 144 were attributed directly or indirectly to the excessive heat. Sunstroke caused 17 deaths, cholera infantum 89, marasmus 34. The heat tents at the various hospitals received many cases, the mortality being rather low, however. Contagious diseases: Diphtheria, 42 cases 9 deaths; scarlet fever, 46 cases, 3 deaths; typhoid fever, 40 cases, 5 deaths.

Divine Healers.—It is announced that the Philadelphia County Medical Society will at its next regular meeting in the fall discuss the question of divine healers, faith curists, and other impostors who are so numerous in the city. The laws of the State do not allow of their prosecution as practitioners unless they are convicted of fraud. Steps will be taken to secure legislation that will compel registration and examination, the same as for regular practitioners. The evil is rapidly growing and should be met in some way.

CHICAGO.

Legacies to Chicago Hospitals.—By the will of the late T. B. Blackstone, the Passavant Memorial Hospital and St. Luke's Hospital have been enriched by the sum of $25,000 each.

Dr. Senn Offers His Services.—Dr. Senn, who served as a volunteer medical officer during the war with Spain, has offered his services to go to China and care for the wounded American soldiers.

The Home for Crippled Children.—The hospital is the gift of Mrs. R. H. McElwee and will cost $10,000. It is to be devoted to the care, both medical and surgical, of destitute crippled children.

Emergency Hospital at Stockyards.—A movement is on foot to establish an emergency hospital at the stockyards. The plan meets with the approval of the police, who are bending every effort to make the scheme a success. Many accidents happen in this neighborhood, where the railroad traffic is very great, and the nearest hospital at present is two miles away. A committee will commence soliciting for the project in the near future.

Mortality Statistics.—An unusually low mortality for any July week is reported in the Health Department Bulletin for the week closed July 14th. Computed on a population of 1,850,000—which is the Department's estimate for the current year—the death-rate is only 12.6 per 1000, the lowest by far for any week in July since 1872, the earliest date of weekly mortality records. The corresponding week of 1899 had about the average July mortality—namely, 17.6 per 1000 population. The principal reduction is among infants and children under five years of age—281 deaths in 1899 and 149 last week, a reduction of 47 per cent., or nearly one-half. The low temperature of the ten days is chiefly responsible for this, although the generally good sanitary quality of the water-supply has much to do with the decrease. This is shown by the wonderful reduction of deaths from the impure water diseases—80 last week as against 182 during the corresponding week last year, a reduction of 56 per cent. As has been frequently noted before, the closing of the schools is followed by a marked decline in the prevalence and fatality of the contagious diseases of childhood—diphtheria, measles, scarlet fever and whooping-cough. The total number of deaths from these causes was 13 last week and 34 the week previous—a decrease of nearly two-thirds (61.7 per cent.). The aftermath of the Fourth of July celebration and of the intensely hot weather of that week swells the deaths from sunstroke by 15, making a total of 23 deaths thus far reported, and a total of 17 deaths from toy pistols, blank cartridges and premature explosions. During the week ending July 14th there were 79 cases of contagious diseases reported. Of these 33 were scarlet fever, 10 diphtheria, 2 measles, 2 smallpox.

GENERAL.

Honors to Prince of Wales.—The Prince of Wales is now a fellow of the Royal College of Surgeons, the President of the college, Sir William MacCormac, having headed a deputation that presented a diploma to him at Marlborough House July 24th.

Another Hospital-Ship for England.—In the House of Commons recently the Secretary of State for India announced that the Maharajah of Gwalior had offered the Government a fully equipped hospital-ship, upon which it is proposed to spend twenty lakhs of rupees, for service in China, as a mark of deep loyalty to the Queen. The offer was accepted. Lord George Hamilton also testified to the Government's great apprecia-

tion of the generosity of those who are sending the "Maine" to China.

Major Hoff Ordered to China.—Major Hoff, now Chief Surgeon in Porto Rico, has been selected as Chief Surgeon of the China expedition, and orders relieving him of his duties in Porto Rico and directing him to report at once in Washington were telegraphed to him July 24th. After a consultation with Gen. Sternberg he will proceed immediately to San Francisco and take the first transport for China. The question of a base hospital was the principal subject under discussion. It will not be determined whether to establish this hospital at Nagasaki or Chefoo until Gen. Chaffee arrives in China and reports on the project.

Smallpox at Montreal.—Owing to an outbreak of smallpox the Board of Health has ordered house-to-house vaccination. Within the last two weeks there have been a dozen cases, four of which have died. They are all in the good English residence district.

Yellow Fever in Cuba.—Yellow fever has broken out in the barracks of the Seventh United States Cavalry and the First United States Infantry in Pinar del Rio. There have been nine deaths during the present month. Eleven cases are now under treatment in the hospitals. Gen. Lee has ordered the camp moved three miles into the country, and quarantine will be strictly enforced. The Chief Surgeon has received orders to institute a thorough investigation into the cause of the outbreak, and special preparation is being made for a thorough disinfection before the First Infantry embarks for the United States.

Dr. Coltman in Pekin.—Dr. Robert Coltman, Jr., and his family are among the Americans shut in Pekin. Dr. Coltman has been physician in Pekin to the administration of the Imperial Railways of China, surgeon to the Presbyterian Hospital at Teng Chow Fu and physician to Li Hung Chang. He was born in Washington, D. C., and his relatives in that city are hopeful that on account of his friendly relations with many of the important Chinese officials he and his family may have been saved.

Chicago Meat for Allies.—Chicago may feed the armies of the civilized nations in their war upon China. Five carloads of packed meat have been shipped to Port Arthur for the use of the Russian Army and five for the Japanese forces. The Russian order called for barreled beef and pork. The Japanese shipment consisted of a larger variety, including canned roasts, soups, and canned beef.

The Plague.—Nothing of a startling nature has been reported during the week regarding the progress of the plague. In India, cholera is working greater havoc than the bubonic pest among the famine-stricken people. Kitasato of Japan is reported to have discovered a second bacillus of the plague. Regarding this, however, he says: "In the septicemia of plague we often find a bacillus in the bubo, the blood and internal organs, which is very like the fowl-cholera bacillus. It is quite different from the bacillus of Yersin and is not the real cause of plague. It might better, therefore, be named as a septicemia bacillus."

Yellow Fever.—Reports from various points announce the presence of yellow fever in a more or less virulent form. Dr. Carter of the Marine-Hospital Service reports from Havana July 9th that yellow fever is steadily although not rapidly increasing. There have been eleven cases and seven deaths during July. Dr. Guiteras reports that at Matanzas, Cuba, there were on July 7th seven genuine cases of yellow fever and three suspects under observation. At Vera Cruz, Mexico, during the week ending June 30th there were twelve cases of yellow fever and four deaths. During the week ending July 7th there were six deaths from this disease. During the week yellow fever was declared epidemic at that port. At Port Limon, Costa Rica, one genuine case of yellow fever, and several suspicious cases were reported July 21st. The unfortunate misunderstanding between the quarantine authorities of Louisiana and Alabama that obtruded itself during the last epidemic and was really the cause of yellow fever gaining a foothold in the United States is again to the fore. The New Orleans Board of Health has quarantined against Port Limon while the Alabama Board has not. The result is that the fruit trade has been turned from New Orleans to Mobile and New Orleans is again in fear of an invasion of yellow fever through the port of Mobile.

Army Nurses.—The "Grant" and the "Sumner," which are now on the way to China, are carrying twenty-five female trained nurses for service in the reserve hospitals in the Philippines. Both of these vessels will touch at Nagasaki, and it is possible that some or all of these nurses will be diverted for the benefit of the Chinese expeditionary force. It is hardly thought that any of the female nurses will be ordered to shore duty in China—if so, certainly not further inland than Taku. But it is possible that if a base hospital is established at Nagasaki some of them will be detailed to duty there. There are now in service or on their way to the Philippines 212 female nurses, who are doing excellent work in the first and second reserve hospitals there.

Smallpox at Nome.—Two vessels arrived at Seattle, Washington, July 19th from Nome. The pesthouse at Nome is reported overflowing July 3d with smallpox cases. Government officials were erecting two other large structures. The disease has spread rapidly, and many cases are quarantined in the tents in which they were discovered. Every Government and city official and every doctor was working night and day endeavoring to check the disease. Dr. J. J. Tyler of Chicago, who returned on one of the vessels, said that there were at least 200 cases, and that nearly 20 new cases were being reported daily.

The Marine Hospital Service officer has been furnished with ample supplies of liquid vaccine and under the reign of martial law that has been established the spread of smallpox should be speedily checked.

The British Medical Association.—The sixty-eighth annual meeting of the British Medical Association will be held at Ipswich on Tuesday, Wednesday, Thursday, and Friday, July 31, August 1, 2, and 3, 1900. President: John Ward Cousins, M.D., Lond., F.R.C.S.Eng., Senior Surgeon Royal Portsmouth Hospital. President-Elect: William Alfred Elliston, M.D., Senior Surgeon in East Suffolk and Ipswich Hospital. The Address in Medicine will be delivered by Philip Henry Pye-Smith, M.D., F.R.S., Consulting Physician, Guy's Hospital; the Address in Surgery by Frederick Treves, F.R.C.S., Surgeon Extraordinary to H.M. the Queen; and the address in Obstetrics by William J. Smyly, M.D., F.R.C.I.P., Examiner in Midwifery, Royal College of Physicians, Ireland. Various subjects for discussion have been arranged in the several sections, as follows: In general medicine, "Influenza as It Affects the Nervous System," and the Problem of Gastric Ulcer;" in surgery, "Subdiaphragmatic Abscess, and "The Methods at Present Available for the Treatment of Simple (Subcutaneous) Fractures;" in obstetrics and gynecology, "Puerperal Fever in Relation to Notification," and "Postpartum Hemorrhage, Its Prevention and Treatment;" in state medicine, "Can Modern Systems of Sewage Treatment be depended upon to Remove the Bacillus Typhosus and Allied Organisms?" to be opened by Dr. Houston, and illustrated by lantern slides, "The Provision of Cottages in Rural Districts, and Its bearing upon Public Health," "What Action can be taken by Sanitary Authorities for the Prevention of Tuberculous Disease, apart from the control of Milk and Meat Supplies?" and "Should Municipalities provide Common Lodging-houses and Workmen's Dwellings?" In psychology, "The Bearing of Sexual Function and Disease of the Sexual Organs on Insanity and Crime," introduced by Dr. Macnaughton-Jones; "The Colony Treatment of Epileptics," introduced by Dr. Aldren Turner, and "Organotherapeutics in Mental Disease." In physiology, "The Formation and Excretion of Uric Acid in Health and Disease," and "Muscular Tonus in Relation to Affections of the Nervous System." In pathology, "The Pathological Distribution of B. Diphtheriæ, and the Bacteriological Diagnosis of Diphtherial Infection," and "The Pathology of Cirrhosis of the Liver in Adults and Young Children." In ophthalmology, "The Treatment of Chronic Glaucoma," and "The Treatment of Lachrymal Obstructions." In diseases of children, "The Nature and Varieties of Pneumonia in Children," "On Lateral Curvature, Flat-foot and Knock-knee," and "Enlargements of the Spleen in Children." In therapeutics, "The Treatment of Internal Hemorrhage," Serumtherapy," "Diet in the Treatment of Disease," and "The Therapeutics of Open Air." In laryngology and otology, "The Indications for Intranasal Treatment in Ear Disease," and "The Pathology and Treatment of Toxic Paralyses of the Larynx." In tropical diseases, "Quinine: Its Action and Modes of Employment in Malaria," "Ankylostomiasis," and "The Etiological and Pathological Relationships of Yaws." In army and navy, "The Medical Service of the Army, Militia, Yeomanry and Volunteers," "The First Aid and Transport of Sick and Injured in Civil Life in Large Towns," and "On Modern Small-bore Rifle Wounds." It has been found that the original constitution and by-laws of the Association are no longer adapted to the Association as it exists to-day, and it is proposed at the coming meeting to adopt entirely new articles of association and rules.

CORRESPONDENCE.

KALAGUA AN ANTISEPTIC ONLY.

To the Editor of the Medical News:

Dear Sir: In *The Herald* of the 19th instant appeared a cablegram from Paris in which I am credited with stating that I have seen a number of apparently hopeless cases of tuberculosis cured by the use of kalagua. This statement is untrue and the use of my name unauthorized. On the contrary, before the New York County Medical Society some months ago I distinctly stated that kalagua was not a specific, but could be ranked simply as an antiseptic in the same class with creosote and ichthyol.

J. Edward Stubbert,
Physician in Charge, Loomis Sanitarium.

Liberty, Sullivan Co., N.Y.,
July 2., 1900.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, July 14, 1900.

THE ARMY HOSPITAL QUESTION—MR. BURDETT-COUTTS' REVELATIONS — APPOINTMENT OF A COMMISSION OF INVESTIGATION—THE POLYCLINIC—INAUGURATION OF THE HUTCHINSON MUSEUM — ORATION BY PROF. OSLER — THE CHAIR OF CLINICAL MEDICINE IN THE UNIVERSITY OF GLASGOW—APPOINTMENT OF PROF. M'CALL ANDERSON—TICKS IN THE CAUSATION OF DISEASE—ESTABLISHMENT OF A VETERINARY COLLEGE IN DUBLIN.

Public attention is still fixed on the question of the efficiency of the Army Medical Service in South Africa and the profound sensation made by Mr. Burdett-Coutt's uncontroverted revelations has not subsided. The stereotyped reply of the Government to every charge of administrative incapacity—that the occurrence was unavoidable—has ceased to satisfy even their own

supporters and Mr. Balfour's cheap sarcasm and attempt to represent Mr. Burdett-Coutts' charges as an attack on Lord Roberts had not the desired effect. The medical profession as represented by the army surgeons does not really appear to be in any way responsible for the defect pointed out by Mr. Burdett-Coutts. It is "red-tape" and the organization to which they are subject that is at fault. This war in spite of its final triumphs has shown that the War Office administration is sadly defective and much in need of reform. Stolid British conservatism in its most extreme and antediluvian form is there rampant. Medical officers are regarded as civilians of an inferior caste and only recently has military rank been, after much opposition, granted to them. In the present war when stores are required the medical department has to send requisitions for them to two or three other departments instead of being able to obtain them directly, thereby involving delay and difficulty. Mr. Julian Ralph, the well-known war-correspondent of *The Daily Mail* bears out much of what Mr. Burdett-Coutts has said. All the time he was at Bloemfontein he was haunted by the horror at the neglect of and cruelty to the sick. At Kimberly the local physicians were similarly horror-stricken by the condition in which the wounded came to them trundled over bad roads all the way from Paardelberg in ox-wagons. They were put on the bare floors of the building which the philanthropic Mr. Rhodes placed at the Army's disposal and secured beds only at the expense of a Colonial dispenser of charity.

The museum presented to the Polyclinic by Mr. Jonathan Hutchinson has been formally opened in the presence of a large and distinguished gathering, including Prof. Osler of Baltimore. The museum will be known as the Hutchinson Museum. It contains the enormous number of water-color drawings of disease, mostly of the skin, which Mr. Hutchinson has had made. Whole galleries are occupied by lupus, syphilis, drug eruptions, etc. The drawings have been transfered from the Clinical Museum —a private museum—which Mr. Hutchinson built in 1893 and in which he held weekly demonstrations until the Polyclinic was opened. The collection may be described as almost unique; as a collection made by a single man, it certainly is so. With the exception of the magnificent collection at Hôpital St. Louis, Paris, it is the only attempt to illustrate systematically the appearances presented by disease in the living subject. Mr. Hutchinson has in all his work and teaching made the greatest use of clinical illustrations and has insisted that their value had not been properly appreciated. Every medical school, he thinks, ought to have a museum of clinical illustrations of disease as well as of pathological specimens.

Prof. Osler delivered an oration on the importance of post-graduate study, which was eagerly listened to by a large audience. He insisted that education should not cease with the obtaining of a diploma, but, as Plato said, should be life-long. He deprecated the tendency of practitioners to fall into ruts and the want of cosmopolitan knowledge of teachers. For many all medicine ended with the tenets of their own particular school. The Polyclinic was fortunate in having connected with it a man of a truly Hunterian mind who loved specimens and collected as Hunter did. No living man had made such a number of careful observations as Mr. Hutchinson. In an obscure or rare form of disease when the text-books are silent and the encyclopedias say nothing, turn to his *Archives of Surgery* and there will probably be found observations on the point.

The Chair of Systematic Medicine in the University of Glasgow, rendered vacant by the retirement of Sir William Gardner, has been filled by the appointment of Prof. M'Call Anderson, Professor of Clinical Medicine in the University. Prof. Anderson has simply been transfered from one chair to another of more importance and larger emoluments. He comes from a family long and honorably connected with the medical profession in Glasgow, being a descendant of the founder of Anderson's College. His father was Dr. A. D. Anderson, at one time President of the Faculty of Physicians and Surgeons. Prof. Anderson was born in Glasgow and received his earlier education there; he graduated with honors from the University in 1858 and became a Fellow of the Faculty of Physicians and Surgeons in the same year. Subsequently he studied in Paris, Wurtzburg, Berlin, Vienna and Dublin, and was eventually appointed Professor of Clinical Medicine in the Andersonian College, Glasgow. On the institution of a similar chair in the University of Glasgow in 1874 he was selected for the position which he has held ever since. He is also Physician to the Glasgow Hospital for Skin Diseases and has published a most successful text-book on this subject. For some time he has been examiner in medicine and pathology for the Army Medical Service. His reputation as a teacher is considerable.

Dr. L. W. Sambon, the well-known Italian writer on tropical diseases, who, on the failure of the military operations of his country in Africa, came to London and settled there, has contributed a very interesting paper to the *Journal of Tropical Medicine* on the part played by ticks in the spread of disease. Until lately it was thought that ill effects following the bites were due to septic infection through the wound. Smith and Kilborne, however, have proved by experiments that the common cattle-tick is the agent whereby the redwater or Texas fever is transmitted to cattle. This fever is analogous to malarial fever in man, and is characterized by the presence in the blood of a hematozoal parasite—*pyrosoma bigeminum*. Cattle do not acquire the disease when they herd with infected animals who have been freed from ticks, but only when they graze in fields infested by ticks which have dropped from infected cattle. The

causation of hemoglobinuric or blackwater fever has been lately much discussed. Many authorities believe that it is an aberrant form of malaria. Sambon, however, is strongly of the opinion that it will be found to be distinct and that it is a tick-borne disease. Ticks abound in all regions where blackwater fever prevails and outbreaks of blackwater fever have occurred after hides (presumably infected with ticks) have been brought into a town.

A veterinary college is about to be established in Dublin. It is extraordinary that Ireland, an almost exclusively agricultural country, famed all over the world for its horses, has never had a veterinary college. The Government has made a grant of £15,000. Prof. Meltam, late principal of the Veterinary College of Edinburgh, has been appointed principal and is about to visit the veterinary colleges abroad at Hanover, Copenhagen, etc., for the benefit of the new college.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

PYORRHEA ALVEOLARIS—FULL TERM ECTOPIC GESTATION—PANHYSTERECTOMY AT FULL TERM—REMOVAL OF THE UTERINE APPENDAGES—BLOOD-PRESSURE IN SLEEPLESSNESS AND SLEEP—CASE OF PNEUMOCOCCUS MENINGITIS.

At the meeting of the Royal Medical and Chirurgical Society, held June 12th, R. J. Godlee remarked that pyorrhea alveolaris, though common, often produces few serious symptoms; it consists of a spongy condition and recession of the gums with deposit of tartar on the teeth, as cause or accompaniment. Periostitis of the fang with suppuration of the tooth-socket may appear. Some hold that a special organism is present, but this has not been confirmed; it occurs in adult life, is often hereditary, chronic and intractable, and may give rise to serious symptoms which may simulate graver troubles. Cases in illustration showed that in the author's experience symptoms of supposed basic abscess of the lung with pleurisy, of supposed gastric disorder, presumably cancer, disappeared under suitable local antisepsis. A third patient had severe stomatitis and glossitis and a fourth apparently obscure lung disorder, with or on account of this disease. Suitable treatment of the gums cured everything.

J. Donelan referred to the large amount of uric acid in the tartar and believed the disease often of constitutional origin. An old gouty patient of his afflicted with this gum-trouble was free from gout except when he allowed his pyorrhea to become bad. A young patient (twenty-six years) with cervical adenitis secondary to pyorrhea always had a relapse with fresh attacks of it. Too little attention is given the teeth in these cases of enlargement of the glands.

W. G. Spencer had seen general septic conditions arise from bad state of the teeth.

T. D. Savill stated that severe functional neuroses may be attributed to this disease. Removal of bad fang-stumps cured an obstinate case of hysteria in a woman thirty-two years of age. In a professional man he saw melancholia and suicide supervene. Intense chronic trifacial neuralgia had in his hands yielded after dentist's care of the tooth-sockets. Among the usual marked symptoms of the disease are listlessness, restlessness, fatigue, tingling in the extremities. Actual edema which pits but slowly, headache, shivering, nervousness, irritability, depression, dyspepsia, etc.

C. S. Tomes thought the discharge is more often swallowed than expectorated except at night when it stains the pillow. Pressure along the gums producing pus is pathognomonic. Injection of antiseptics between the gum and tooth is good but does not last, scraping away the alveolus is too painful and tedious, but these are common means of treatment. Extraction of the teeth rarely was followed by suppuration in the wounds. He thought the murexide test for urates upon which the statement of their abundance in the tartar is based is too unreliable.

W. Ewart thought he had seen three cases of primary malignant endocarditis in which the mouth had been the source of infection.

W. B. Paterson reported a case cured at once by daily treatment of the mouth for a week after two years of suffering and treatment for nasopharyngitis and otitis, even the mastoid cells being trephined.

Godlee in closing said he had seen a case of tuberculous cervical adenitis develop after pyorrhea. The great desideratum, he thought, is a means of treatment which the patient may carry out himself.

At the meeting of the London Obstetrical Society, June 6th, Mr. A. Doran read a paper on ectopic gestation, with fetal death at the eighth month and abdominal section. Patient was thirty-four years old; fifth pregnancy in February, 1899, after a lapse of four years; early abdominal pains; diarrhea from July to the end of October; labor pains and hemorrhage, then sepsis set in; fetus plainly palpable; December 12th removed by abdominal section; fetid; developed in posterior layer of the broad ligament; sac packed and drained; placenta recovered piecemeal; fecal fistula developed and discharged for few weeks; did well for six weeks; then emaciation and chronic obstruction set in; death nine weeks after operation. Several coils of intestine had been dragged down by the contraction of the sac, involving much mesentery, whence very likely the emaciation, although vomiting and distention were both absent. The three clinical points are sac infection (especially common in posterior tuboligamentous ectopic gestations), diarrhea (usually due to attachment of the placenta to the intestines), and emaciation (due to entangling of the intestines, as above). The absence of an inferior sac wall in this variety made total extirpation impossible. There seems to be no known

way of preventing sac contraction and its dangers.

BUTLER-SMYTHE said the fetid contents of the sac alone would prevent enucleation, approved of the treatment above, especially of the iodine irrigation of the sac.

C. J. CULLINGWORTH said that gauze packing is not so valuable in fetid sacs as in the prevention of primary or secondary hemorrhage. Irrigation in all surgery might easily be and usually is overdone. Diarrhea may show not only an intestinal placental attachment, but also irritation by pressure and sepsis due to sac-infection.

J. D. MALCOLM claimed that the prompt establishment of the fecal fistula proved that removal of the sac would have been impossible. Irrigation in such cases he considered absolutely indicated. Death occurred in this patient, whom he too had seen, by malnutrition.

R. BOXALL thought a rubber bag like a child's balloon might be used to prevent sac-contraction.

F. W. KIDD read an account of a successful panhysterectomy on a full term pregnant uterus for fibromata obstructing delivery at the Royal Academy of Medicine in Ireland, on May 25, 1900. Primipara; forty years old; true pelvis filled with fibromata; absolute dystocia; presenting part out of reach, hence no diagnosis of position; median incision from 2 inches above symphysis to 2 inches above umbilicus; the broad, then the round ligaments ligatured and cut; peritoneum on the anterior uterine surface divided transversely and stripped off with the bladder; uterine vessels ligated and divided; serosa peeled from posterior wall and divided; vagina cut across close to the presenting head and shoulder; then, with its mucosa inverted, sutured; vessel-stumps drawn down and hidden beneath the peritoneal flaps which were sutured. Good recovery. The specimen contained the child *in situ* with only head and shoulder escaped.

M. LAWRIE at the session of the British Gynecological Society, held June 14th, said that the removal of the uterine appendages is based on the following indications: (1) Disease of the oviduct, suppurative, catarrhal, cystic, or other resulting in the destruction of its integrity or of its lumen; (2) blood-cysts of both ovaries and tubes; (3) solid tumors of the ovary; (4) most cases of ectopic gestation. As to a large number of sufferers from reflex troubles possibly located in the genitalia he said in most of them clinical examination showed little; pathological sections, grave incurable changes. On the general question as to whether a part or all of the genitalia should be removed he stated that this would depend on (1) whether or not other means had been tried and failed; (2) whether the delay inherent in trying them gave more risk than the operation; (3) when the risk of operation was less than that of non-interference.

C. H. F. ROUTH took the ground that removal of the ovary so alters a woman's temperament as to predispose to insanity; hence the operation is rarely justifiable. Aspiration and injection of iodine are his treatment of inflammatory tumors.

G. ELDER (Nottingham) believed that examination under an anesthetic or exploratory incision with examination at the time would be a wise detail in many cases. He thought too many appendages are removed without justification.

E. S. BISHOP (Manchester) said that mere aspiration of a pyosalpinx by a trocar renders filling up likely, free incision and drainage alone avail. He claimed that a small myoma uteri with diseased appendages is and a myoma with hemorrhage is not an indication, because in the second case the removal of appendages, healthy or diseased, usually does not control the bleeding. In the former case the disease of the appendages and not the fibroid is the indication.

J. F. JORDAN (Birmingham) said that in a case of cystic ovary he removed one, treated the other with ignipuncture and the patient bore a child a year later. In myomata removal of the appendages often does good and renders secondary hysterectomy much safer.

J. BLAND SUTTON said he never does the operation except in the presence of palpable disease, especially inflammation and ectopic gestation. Under the inflammations are hydro-, pyo- and hematosalpinx, tuberculous and chronic inflammation. Gonorrhea and postpartum endometritis as causes of tubal disease can each be largely removed by care. He never performs oophorectomy for neuroses and never for dysmenorrhea in the absence of special physical signs. He compared oophorectomy for fibroids of the uterus with the same operation for mammary cancer and said both were rapidly disappearing from the field of legitimate surgery.

S. KEITH said that some normal-looking ovaries have thick capsules causing pain during menstruation, hence such after incision for diagnosis should be removed.

F. EDGE (Wolverhampton) said that conservative measures succeed about as often as the radical, both failing in the same category, namely, when the other pelvic organs are affected and only removal of the uterus and its adnexa would avail. Gonorrhea he felt to be a certain indication.

L. C. BRUCE discussed the blood-pressure of sleeplessness and sleep at a meeting of the Edinburgh Medico-Chirurgical Society, June 6th. The normal arterial blood-pressure in the horizontal position was taken at 110 m.m. of mercury. The first points investigated were the following: (1) Are there any unusual conditions in the blood-pressure associated with the sleeplessness of mental disease? (2) What changes in the blood-pressure occur in these cases after the use of drugs? Cases with high and with low pressure during sleeplessness occur. The drugs are paraldehyde, sulphonal and trional. In high blood-pressure cases the order of certainty of action of these three is paraldehyde in two dram doses, then sulphonal, then trional. Bromide of potassium is found unsatisfactory. Dur-

ing the sleep thus produced the pressure always falls to or below the normal. In the low pressure cases with sleeplessness, paraldehyde excites in large doses and never produces sleep; in twenty- to thirty-minim doses it acts well. Erythrol tetranitrate is used as a pressure-reducer in doses of one to two grains in twenty-four hours. Of nine cases, three were fully relieved, three temporarily and three not at all. A second series of observations on convalescent cases threw light on the following subjects: (1) Is sleep possible with a pressure of 130 m.m. or higher? (2) What relation does the morning blood-pressure bear to that of the evening during healthful sleep? (3) Is there any difference in the blood-pressure of normal and artificial sleep? It was found that when the pressure was high it always fell at the time sleep was established. The healthy blood-pressure rises toward morning, but in sleeplessness the opposite obtains. In drug-sleep the blood-pressure always falls about 10 m.m. below that of natural sleep in the same person, rising again as the effect of the drug passes off to the usual pressure for that person during normal sleep. In other words, drug-sleep can become normal sleep.

C. H. Drury at the May 18th meeting of the Section on Medicine of the Royal Academy of Medicine in Ireland read a paper on cerebrospinal meningitis in which he noted the following interesting case: Male, fifty years old; just recovered from pneumonia and walking about the ward; suddenly attacked by meningitis and died four days after its invasion; at the autopsy a vegetation on the aortic valves and the pus from the meningeal fluid gave pure cultures of the diplococcus pneumoniæ.

SOCIETY PROCEEDINGS.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

Fifty-sixth Annual Meeting, Held at Richmond, Va., May 22, 23, 24 and 25, 1900.

The fifty-sixth annual meeting of the American Medico-Psychological Association was called to order in the Convention Hall of The Jefferson, Richmond, Va., at ten o'clock, May 22, 1900. The session was opened with prayer by the Rev. Dr. Downman. Addresses of welcome were delivered by his Excellency, J. Hoge Tyler, Governor of Virginia, and Honorable R. M. Taylor, Mayor of Richmond. An address of welcome on behalf of the medical profession was made by John N. Upshur, M.D., of Richmond. The addresses of welcome were responded to by the President of the Association, Dr. Joseph G. Rogers.

The report of the Treasurer was received, showing that the Association has no debts and had on hand May 1, 1900, $1092.62 in certificates of deposit and cash. The report of Council was received and the Nominating Committee was appointed. The Association then took a recess to permit the registration of members.

The Presidential address, "A Century of Hospital Building for the Insane," was then read by Dr. Joseph G. Rogers. The Doctor presented a brief review of the major changes which have been developed in the provision of homes for the insane during the past century.

The session convened in the afternoon at 3:10 P.M. The first paper, entitled, "Two Hundred Operative Cases—Insane Women," was read by R. M. Bucke, M.D., London, Ontario. This will appear in a future issue of the Medical News.

Dr. Manton called attention to the large percentage of recoveries reported by the author. The recovery of such patients, in his experience, should not be attributed wholly to operative procedures; the asylum treatment probably plays a very important rôle. Most of the cases had been in the hospital a long time before operation and probably would have not recovered so promptly had they been operated upon immediately upon their entrance. Dr. Manton had never seen a case of insanity, other than puerperal, that could be attributed to pelvic disorder, and had never observed a mental cure of insanity from a purely surgical procedure.

Dr. C. R. Woodson, St. Joseph, Mo., was constrained to believe that the percentage of disease of the generative organs of the Canadian woman is much in excess of the American, and that the operative procedures were followed by a much larger percentage of recoveries than would be expected in the United States. He agreed with the author that operation should be considered only in the presence of some pathological condition demanding operation.

Dr. J. Russell, Hamilton, Ontario, believed that the physical as well as the mental type of Canadian women is in every way equal to that of American women; and he would deny that they were more subject to diseases of the generative organs than the American women. The discussion was closed by the essayist.

"Is the Anglo-Saxon Race Degenerating?" was the title of a paper read by Dr. J. Russell, of Hamilton, Ontario.

"Degeneracy from a Philosophical Point of View," was read by Dr. O. Evarts, College Hill, O. These two papers were discussed together.

"The State of New York and the Pathology of Insanity" was read by Dr. P. M. Wise, New York. (See p. 862.)

Dr. E. C. Runge, St. Louis, Mo., said he felt entitled to speak on Dr. Wise's paper because last year in his paper on "Our Work and Its Limitations," led by a misconception, as he understood now, he took opportunity to eulogize the New York Pathological Institute. He had pointed with pride to New York State, but said he had found that New York State is just as far behind in giving real opportunity for original re-

search as any other State of the Union. From communications read it seemed that men on both sides of the ocean have a wrong conception of the Institute. He declared that if the Institute were conducted as they had thought, it would be ideal, but if it was developed for the purpose of giving men an opportunity to learn some elementary things in blood examination, etc., it would dwindle down to a mere state affair.

"The Study of Clinical Psychiatry" was read by Dr. Aug. Hoch, of Waverley, Mass., and discussed by Dr. Henry M. Hurd, Dr. E. C. Runge and Dr. H. A. Tomlinson.

"The Colonization of Certain Classes of the Chronic Insane, with Suggestions and Illustrations from the Craig Colony for Epileptics," was read by W. P. Spratling, M.D., Sonyea, N. Y., and illustrated by lantern-slides.

Dr. J. M. Mosher, of Albany, N. Y., read a paper on "The Insane in General Hospitals." Hospitals for the insane are not always available. The natural reluctance of patients and their friends to commitment often prevents this step until the disease has reached a stage at which the chances of recovery are jeopardized; a considerable class need skilled medical observation before the advisability of removal is determined: and many, especially drug and alcohol habitues, are in great measure irresponsible, but are not recognized by law. With more manageable cases attempts at treatment are made at home under favorable conditions. When home-care is no longer possible the unfortunate victim, in an outburst of violence of delirium, is hurried away to jail or some other convenient receptacle, his life in the balance, while precious time is consumed in judicial proceedings. The essayist regards State care as incomplete until some provision is made by the erection of special hospitals or special pavilions in connection with general hospitals. Dr. Mosher then outlined the plan of a pavilion being built to the Albany Hospital with the anticipation that it would furnish (1) transient accommodation for insane patients committed to a State institution; (2) for patients who need observation before the advisability of commitment to a State institution is determined; (3) for mild cases of insanity who may recover in a general hospital; (4) for victims of drug addiction; (5) as an emergency resort for rapidly-developing and critical cases of delirium, and (6) to the sudden forms of mental disorder which occur in the course of general diseases or after the shock of surgical operations and anesthesia. The general hospital thus becomes an adjunct to the institution for the insane, and opportunities are offered for the preparation of patients for the latter which should add greatly to its effectiveness.

"Some Statistics and a Partial History of the Insane in Virginia," was read by Dr. R. J. Preston, Marion, Va.

"A Clinical Case," by Dr. A. R. Moulton, Philadelphia, presented the history of a young man, nineteen years of age, a native of the South. He had always been delicate, but was very bright mentally. At six he received a fracture of the skull which was not recognized, although he had surgical attention. A year after the scar became more apparent, and five years later a depression could be made out. There was a history of headaches from the time he started to school. When sixteen years old he began kleptomaniac practices. There was often noticed a sudden blanching of the face followed by blotches. The next year his condition was diagnosed as epilepsy by a neurologist and operation advised. An operation was performed on the vertex of the skull and over the left eyebrow. Above was found a rounded depression pressing upon the brain, but making no indentation thereon. This covered an area of one and one-half inches in diameter. The bone was entirely removed. Over the eye depressed bone was found that had made an indentation in the brain. The dura was intensely adherent to the depressed fragment. In the brain substance were spiculæ of bone which were removed and the brain freed. His general physical condition was greatly improved, but there was no effect on the moral nature. He was untruthful as before, ran away from home, contracted debts, borrowed and stole money, deceived his friends, all under the plea that he "had to do it." History of the ancestry shows that the boy's father is very nervous and has suffered from headaches most of his life. His mother contracted the opium habit after his birth and died of convulsions, said to be uremic, at thirty-four. A large number of his relatives have suffered from severe headache all their lives. three died of paralysis, one was insane, one died of apoplexy, and so one. In January he was placed in the Pennsylvania Hospital for the Insane, where, with improved nutrition and the pursuance of a healthy regimen, he is apparently forming habits which, it is hoped, will become so fixed that he will yet retrieve himself.

"Epilepsy in the Insane" was read by Dr. Isham G. Harris, Poughkeepsie, N. Y. The percentage of insane who are epileptic varies from 3.5 in the New York Hospitals to 11.1 in the Summerset Asylum for the Insane. The proportion of epileptics to the general population amounts to about 1 to every 500 or 600. Something over 27 per cent. of epileptics are mentally defective or insane. The mortality among insane epileptics amounts to about 40 per cent. Heredity can be traced in at least 50 to 60 per cent. of the cases, if we consider epilepsy, intemperance, insanity and crime as predisposing factors; 50 per cent. of the patients' parents are foreign, 25 per cent. of the patients are foreign born. As to order of birth it would appear that the *first* and *third* born are most liable to become defective. From 70 to 75 per cent. of insane epileptics die in *status epilepticus*. Hospital-life among the men is about 3.33 years; among the women it is 2.3 years. The average duration of insanity in these cases is about nine years. Some speech defect is very common and occurs in at least 75 per cent. of the cases.

Dr. William L. Worcester laid emphasis on the mortality of these patients from epilepsy and called attention to the fact that the books on general medicine and neurology give a wrong impression in stating that epilepsy is not serious in prognosis as regards life.

The annual address, "The Effect of Freedom upon the Physical and Psychological Development of the Negro," was made by Dr. J. Allison Hodges, of Richmond.

"Separate Provision for Tuberculous Patients in State Hospitals for the Insane," was read by A. H. Harrington, M.D., Hathorne, Mass. The paper was discussed by Dr. G. H. Hill, Dr. P. M. Wise and Dr. H. A. Tomlinson.

Dr. Geo. P. Sprague, Lexington, Ky., read a paper on "Primary Dementia." The essayist endorsed the clinical classification of cases of insanity, incorporating such distinctions as may be obtained by etiology, pathology and speculative psychology. He then called attention to a class of cases which, for want of a better name, are grouped under the title of primary dementia. He thus includes all cases of so-called primary mental deterioration, stuporous insanity and pubescent insanity, katatonia and melancholia attonita, with occasional cases formerly grouped with mania, melancholia, paranoia and circular insanity. This classification corresponds closely to the dementia præcox of Kraepelin, except Kraepelin hesitates to admit katatonia to be only a variety of the fundamental disease. The essayist ascribed an important rôle in etiology to heredity. Active sexual excitement, which Kraepelin states to be uniformly present, the essayist had not observed in more than three per cent. of cases. The essayist considers cases of so-called melancholia attonita simply apathetic cases of primary dementia. Thus the essayist includes under the term primary dementia a large number of insane persons in whom it can be predicted from the moment a diagnosis is made that they will have a long array of certain paradoxical symptoms which will after a time subside, leaving the patient in a condition of true dementia. If this be so, it points strongly to these cases having a common pathology which should receive more attention at the hands of our microscopists in the future than it has in the past.

Following this paper, Dr. G. H. Hill, Independence, Ia., read a paper on "Dementia Præcox," and the two were discussed together. Dr. Hill said that dementia præcox is a new term used by Kraepelin in making a clinical study of the forms of insanity. In general terms there are two kinds of insanity, *viz.*, cases that may end in recovery and those in which the mental faculties are permanently impaired. Paranoia, paretic dementia, epileptic dementia and senile dementia are irrecoverable. Dementia præcox is applied to cases where the mental faculties become permanently impaired in early life. Patients of this class have heretofore been described by some authors as cases of primary dementia. In the course of time they settle into a chronic condition and, unless the manner of development is known, appear like cases of the so-called secondary dementia. It seems very desirable for alienists to persevere in their efforts to determine upon a simple but more uniform classification of the forms of insanity. This will take a long time, it will require close observation, patience and cooperation, but a scientific knowledge of this subject requires this kind of work.

Dr. C. A. Drew emphasized the desirability of having some new form of classification, and agreed with the essayist that the simplest classification is the best. He would advocate that the Association make a classification that could be varied from year to year, as found desirable.

Dr. E. C. Runge had found dementia præcox a very convenient class in which to put doubtful cases, since often it is necessary to await the development of a case before a positive diagnosis can be made. Thus, the cases of dementia præcox which later become demented are separated from the paranoiacs, and this very much simplifies the work of those who cannot make researches but must adapt the work of others to their own need.

Dr. A. H. Harrington, Hathorne, Mass., believed that the classification of cases of insanity leads to a greater scrutiny and more thorough examination into the clinical symptoms of mental disease. From a somewhat extended use of the classification of Kraepelin he had noticed a diminution of the cases of acute mania and acute melancholia and possibly acute confusional insanity, while the cases of dementia have increased. This he attributes to a closer scrutiny of the cases whereby the signs of dementia are recognized.

Dr. C. W. Page, Middletown, Conn., preferred the term dementia præcox, which simplifies the classification. It is a great advantage to use terms to designate the various forms of insanity which shall give a mental picture of the whole course of the disease. The interest in the study of cases is greatly increased by holding clinics.

Dr. H. A. Tomlinson does not believe that the time has yet come when it is possible to make a classification of these cases. Personally, he would prefer to substitute the word degeneration for the word dementia, and he would look upon dementia not as a disease but as a process varying within certain limits, and the rapidity with which the symptoms develop will depend upon the extent of the structural defect. The symptoms of dementia are not different from those manifested in senility. A deeper study into the morbid physiology of the body will reveal more to explain the existence of the manifestations of mental disease than can be hoped from metaphysical studies in attempting to explain the symptoms from the morphology.

"The Study of a Year's Statistics" was read by Dr. Chas. W. Pilgrim, Poughkeepsie, N. Y. The essayist presented the results of an examination of the statistics of the Hudson River Hospital for the year ending September 30, 1899.

Dr. Richard Dewey, Wauwatosa, Wis., read a paper on "What Conditions, if Any, Would Warrant the State in Taking Life Because of Incurable Mental Disease or Defect." The essayist epitomized his line of thought as follows: Those who wish to establish any method of "euthanasia," or judicial execution of victims of incurable mental defect or disease have the following task before them: (1) They must establish a new principle to the satisfaction of the people as a whole and secure changes in the organic law giving legal force and effect thereto. This principle would be embodied in the declaration that life may be taken judicially for other causes than crime, and in particular that judicial execution may be inflicted upon those afflicted with incurable idiocy or insanity. In other words, it must be proved that such persons have not the same right to live that others have or even the same right as victims of other incurable diseases, *e. g.*, phthisis or leprosy. (2) The reasons that can be given for treating the incurably idiotic or insane as not having the same right to live as others will be either that the life and propagation of such persons are so injurious to the commonwealth as a whole that the evils connected with destroying them judicially (in a comfortable manner) is less than the evil of letting them live, or, on the other hand, it must be proved that life is of no value or of less than none to such persons. If the first reason be accepted, its application must be *universal*, and *all* persons whose lives are equally or more injurious to the community than those of the incurably insane and idiotic, whether sound or unsound mentally, must be judicially removed (in a comfortable manner). If the second reason be accepted, again, it must be made *universal* in its application and *all* persons whose life is of no value to themselves must be judicially executed (in a comfortable manner). Incidentally, all the evils growing out of placing less value than heretofore upon human life must be considered. (3) A criterion must be established which will be capable of *universal application* and enforcement as to *what constitutes incurable idiocy and insanity* within the *meaning of the law*. (4) Last, but not least, it must be reasonably certain that a new population of defectives would not continually confront the commonwealth springing from the loins of those remaining after all had been removed who were unable to escape the newly-proposed penalty attaching to incurable insanity and idiocy.

Dr. C. P. Bancroft, Concord, N. H., read a paper on "Legal and Mental Insanity. Reflections upon the Recent Trial and Conviction of Bradford P. Knight at Augusta, Maine." The essayist reported the trial of Bradford P. Knight for murder, the interest attaching to the case being the emphasis laid on the degree and type of insanity. The judge stated that there are two types of insanity which he designated as medical and legal insanity. He held that the legal meaning of the term "insanity" meant more than in a medical sense, that it was mental disease of such character and extent as for the time to destroy mental responsibility, there being an inability on the part of the individual to distinguish between right and wrong with reference to a particular act. The judge argued that a person may be in the eye of a doctor medically insane and yet not be insane in the legal sense. As opposed to such teaching, the essayist cited the ruling of Chief Justice Doe, that there is no legal test of insanity. Insanity is a mental disease; the product of mental disease cannot be a crime; tests of mental disease are matters of fact; and whether the defendant has a mental disease, and whether his act is the product of that disease, is a question of fact for the jury to consider. This is good law and sound medicine.

Dr. B. D. Evans said that it is perfectly natural that the prosecution should look upon the physician employed by the defense as a medical advocate for the defense, and also that the defense should look upon the physician employed by the prosecution as an advocate for the prosecution. When there is a disagreement between the opinions of physicians, the jurors at once begin to search for precedents. When called to testify for the prosecution or the defense Dr. Evans would prefer to examine the individual first, without accepting a fee, and after arriving at a conclusion he states to the prosecution or defense whether he can or cannot be of advantage to them.

Dr. George F. Jelly stated that in Massachusetts the physicians employed by the prosecution and defense frequently examine the patient and consult together before expressing an opinion.

Dr. W. H. Hancker, Farnhurst, Del., mentioned the fact that jurors often pay no attention to the testimony of experts but are governed by the ruling in some ancient case. Under the law in Delaware any two persons in the State may go before a sheriff and swear that any person in custody is insane and a trial will have to be had at once before the sheriff. The law was passed largely because a patient who was under the care of Dr. Hancker and had been pronounced insane by a number of eminent men was decided by the jury not to be insane. The patient was an undoubted paranoiac.

Dr. A. B. Richardson, Washington, D. C., read a paper on "The Influence of Military Campaigns in Tropical Climates in the Production of Insanity." The essayist reached the following conclusions: (1) Even with such a careful selection of physical types as usually results from the examination of recruits for the army and navy, it is possible for a considerable number with defective histories as to mental disorder to slip through. Perhaps it discloses the necessity for a little wider latitude in these examinations and the rejection of such cases as show any tendency toward mental disorder. (2) It would seem that these cases but corroborate experiences elsewhere in the study of the simple forms of acute insanity, in which there is the presence of an adequate exciting cause which has operated only for a limit-

ed period. Barring those cases in which a tendency was shown toward mental disease by hereditary predisposition or previous attack, we should expect exciting causes which have operated for only a few months in most instances and are such as produce extreme exhaustion and physical and nervous overstrain, or are the result of the toxic influences of specific poisons, like those of fever, circulating in the system for comparatively limited periods, to produce just such forms of mental disorder as we here find. They are comparatively simple in type, the most prominent symptoms are mental confusion and emotional depression, and the pathological conditions are not accompanied by actual tissue degeneration, but are susceptible, in most instances, of almost if not quite complete removal. (3) As to the influence of alcoholism, it would appear that this cause is reduced to a minimum in the Philippine army, there being but five out of an average of 60,000 soldiers in service for one year in which it was given as the principal or contributing cause. In the navy in 16 of the 56 cases alcoholism was said to be the chief or contributing cause of the disease. This variation is probably in part accounted for by the different practices of the examining surgeons. In the navy, if a man gets shore-leave and goes on a "bout," the tendency is to ascribe whatever mental disorder may follow wholly to the one excess because of its prominence, and perhaps without due consideration of the influence of the prolonged and monotonous service of the man within the narrow limits of life on board ship. In the army a greater amount of alcoholic excess, distributed over a longer period, is not so conspicuous, and the other physical causes are more prominent and more often seem to the surgeon to overshadow the tendency toward alcoholic excess.

Dr. William Mabon, of Ogdensburg, N. Y., read a paper on "Surgical Operations in Hospitals for the Insane." The essayist called attention to the abundance of opportunities which hospitals for the insane offer for such surgical work as will promote the comfort and well-being of the patients. Reference was made to all surgical procedures which may add to the comfort of insane patients whether it holds out much hope for their mental relief or not. Nevertheless, the essayist bore personal testimony to the results sometimes unexpectedly obtained by surgical measures. A number of cases were reported and a list presented of the operations performed at the St. Lawrence State Hospital. The work was entirely satisfactory, from the surgeon's standpoint, and in a number of cases mental recovery was directly aided by operation.

In the discussion Dr. Evans reported a case that would seem to indicate that it is not always a crime to perform ovariotomy for the relief of insanity even when there is apparently no pathological condition in the ovaries or appendages. Dr. Manton expressed himself as delighted to hear such testimony from an alienist.

The following officers were elected: President, Dr. P. M. Wise; vice-president, Dr. R. J. Preston; secretary and treasurer, Dr. C. B. Burr; councillors, Drs. S. E. Smith, W. Mabon, James Russell, A. B. Richardson; auditors, Drs. William M. Edwards and W. B. Lyman.

The next place of meeting will be Milwaukee.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held Thursday, April 5, 1900.

The President, Wm. H. Thomson, M.D., in the Chair.

The subject for the evening was scarlet fever and its complication. Dr. Floyd Crandall read a paper entitled "Scarlet Fever, Its Prevention and Treatment." (See page 857.)

Scarlatinal Nephritis.—Dr. Robert Coleman Kemp said that for the intelligent treatment of nephritis as a complication of scarlatina the pathology of the affection should be properly understood. The nephritis is undoubtedly due to the specific poison of the disease. Originally the glomeruli in the kidney are attacked, then the parenchymatous and, finally, the interstitial tissues become involved. Although scarlatinal nephritis is often spoken of as a glomerular nephritis, it is never exclusively confined to these structures in the kidney. There is a distinct clinical entity in scarlatinal nephritis. The most prominent factor and the first noticeable is the anasarca. The other clinical characteristic of the disease is the presence of albumin in the urine and the irregular febrile temperature. Scarlatinal nephritis is never pure. There are always secondary factors in its etiology. It has often been noticed that when, during the course of combined diphtheria and scarlet fever, nephritis develops, the kidney affection will often improve after the exhibition of diphtheria antitoxin. It is evident in such cases that the nephritis is diphtheritic in origin and not scarlatinal. In post-scarlatinal nephritis, which occurs after true scarlet fever has run its course, it is clear that while the scarlatina may be a predisposing factor there are other elements that enter into the etiology of the disease.

Prophylaxis and Initial Treatment.—It is important not to miss the clinical manifestations which announce the onset of nephritis. If the signs are recognized early treatment and care will limit the extent of the disease and the amount of damage that will be caused by it. When during the course of convalescence from scarlet fever, there is an unaccountable rise of temperature, the beginning of a nephritis should be suspected. Even before this there are certain slight changes in the urine that give warning of the occurrence of a renal complication. Especially has an increase of urates been noted. Sometimes there is a sudden fall of specific gravity and this before either albuminuria or polyuria has developed. After the first week of scarlet fever the specific gravity and the amount of urine

passed should be watched carefully. In certain cases an increase of specific gravity takes place. This is soon followed by a lessening in the quantity of the urine and the development of high color. These are symptoms of a congestion of the kidney and should be the signal for prophylactic treatment for the nephritis. These changes in the urine occur before the development of anasarca or of the lassitude and weakness which are usually considered to be the initial symptom of the disease. The pain in the back, which is sometimes considered pathognomonic does not always occur, and often is absent until the disease has fully developed. The anasarca may not be among the early symptoms and yet may develop very extensively later on, filling up all the serous cavities and even causing edema of the brain.

Scarlatinal Uremia.—This is usually preceded by certain prodromal symptoms that are not difficult of recognition. The urine becomes small in amount, is of high color and high specific gravity. There is nausea at first, and then vomiting and diarrhea. Restlessness develops followed by muscular twitchings. Amaurosis sometimes develops as an early symptom. After a time the patient becomes stuporous and finally complete coma develops. Sometimes death occurs without this regular progression of symptoms; either fulminant edema or true cerebral apoplexy closes the scene without much ado. At times there develops during the course of the uremia an enlargement of the heart. Enlargements of the liver and spleen have also frequently been noticed and these are usually fatal cases.

Treatment of Uremic Conditions.—As soon as spasmodic symptoms begin to develop nitrite of amyl as an inhalant should be used for its antispasmodic effect. Wherever pulmonary symptoms manifest themselves early, oxygen should be used freely. Oxygen has a far wider sphere of usefulness than is usually conceded to it by the average practitioner. It has often been said that the introduction of oxygen into the treatment of the case is usually the signal for the family to lose hope. It is used, as a rule, only in desperate cases and rather with the hope of prolonging life than with any idea of ultimate cure. Where respiratory symptoms are prominent, however, or where anemia is a marked feature of the case, oxygen will always be found to be of the greatest service. Besides making up for the decreased pulmonary activity, oxygen acts as a stimulant to the general circulation and so has a secondary action on the kidneys and the skin. It is of service consequently even in cases where no lung trouble is present. So far it has usually been introduced too late into the treatment of cases. Its early employment will give excellent satisfaction. It aids not alone in respiratory excretion, but in all other forms of bodily excretion and so keeps off the development of toxic conditions. Oxygen should also be employed in other toxemias besides those due to renal insufficiency. In sepsis, for instance, where the presence of toxins in the circulation injures the cellular elements of the blood, it will be found to have a distinct sphere of usefulness. Those who have used it have become convinced of this.

Normal Salt Solution.—A very important modern adjunct to other treatment of the toxemia developing from renal insufficiency after scarlatina is the introduction of normal salt solution into the circulation. This may be done in any one of three ways. By enteroclysis, by hypodermoclysis, or by direct infusion into a vein. A small intravenous infusion acts as a powerful diuretic even in cases where it does not cause a preliminary rise of blood-pressure. This question has been investigated very carefully in animals and it has been noted that diuresis was increased in about two minutes after the intravenous injection of even a very small quantity of normal salt solution. Enteroclysis is a simple and easy way of introducing normal salt solution into the system. The fluid to be injected should be at a temperature of 110° to 120° F. Enteroclysters at low temperatures cause a preliminary stimulation, but this is followed by a stage of depression. The warm clysters are always beneficially stimulant. A continuous enema is often a precious therapeutic aid to other forms of treatment. The absorption of pleuritic fluid due to the persistence of oliguria may be brought about by this method. There is no proportion, as a rule, between the amount of fluid absorbed by the intestines and that which is eliminated by the kidneys. As much as forty ounces of urine are known to have been passed after the administration of a clysma of ten ounces.

Hypodermoclysis.—The best place for introducing salt solution under the skin is in the lateral lumbar regions. Here there is no interference with respiration, no pains on movements of the limbs, and no interference with ordinary muscular movements. Hypodermoclysis would seem to be indicated in some cases after the administration of antitoxin. Experimentally, where large amounts of antistreptococcus serum cause the development of certain reactive symptoms local and otherwise in animals, the administration of salt solution hypodermically seems to prevent the development of symptoms. Antitoxic sera are often followed by the development of renal congestion. This congestion does not occur, however, if twice the amount of normal saline solution is given hypodermically just after the injection of the antitoxins. Where diphtheria and scarlet fever are running their course together, or where diphtheria follows scarlet fever and there seems to exist a tendency to nephritis, antitoxin injection should be followed by hypodermics of saline solution. Anasarca does not contraindicate the use of hypodermoclysis. It will usually be easy to find some portion of the body, in which there is no fluid in the cellular tissues, reasonably suitable for hypodermoclysis. An increased flow of urine occurs after even very small amounts of saline injected hypodermically, so that this method of treatment, far from adding to the anasarca, will decrease it.

Carbonic Acid Gas.—The use of carbonated baths has not yet become as general as the therapeutic properties of this method of treatment justify. As an eliminant the carbonic acid gas is of great service even in acute uremia. It should be used at a temperature of about 100° F. Dr. William H. Thomson has seen it reduce temperatures very effectively in scarlet fever. The Brand method of treatment is of service in scarlet fever, but is not so good as the Nauheim, where the carbonated baths can be readily provided. Sponging with alcohol and water will often reduce temperatures that are not persistently high and that yet are causing restlessness. Where bathing facilities are not readily at hand this method may be made to supply the deficiency. The use of antipyretic drugs in scarlet fever is not advisable, as a rule. In general no attempt should be made to reduce the temperature unless it is persistently running above 103° F.

Recent Scarlatina Milder.—In recent years, said Dr. Chapin in the discussion, the type of scarlet fever has changed considerably for the better. In the text-books there are accounts of whole families taken off by malignant forms of the disease. The complications of the affection, too, were much more severe than are noted at present. In the early practice of most physicians of middle-age now, severer forms of the disease were seen than at the present time. Diphtheria has undoubtedly become milder in somewhat the same way. While severe cases of scarlet fever are easy of diagnosis, some of the mild cases may perplex even the skilled diagnostician. One of the most difficult problems in diagnosis in infectious diseases is the differentiation of severe rötheln and very mild scarlet fever. The differential points of the two diseases are easy. But the distinctions fade into one another in most puzzling fashion. Some time ago Dr. Chapin was called to see a patient with a light punctiform red rash that was just disappearing from the elbows. The child had been but very little indisposed. The case seemed to be one of rötheln and was so pronounced. It proved to be scarlatina and developed very severely in two other members of the family. An older child suffered from severe scarlatinal endocarditis while an adult died from the disease. Certain diagnostic points are important. The tongue after two or three days takes on a bright, beefy red appearance at the edges and this gradually invades the whole tongue. This is a very valuable sign in mild cases, where one is not sure of the rash. It is not always easy to decide whether the so-called strawberry tongue is really due to scarlet fever or not. There are a number of appearances on the tongue which are confused under this title, most of which are due to digestive disturbances incident to the fever, rather than to anything more specific. Desquamation is not always a pathognomonic sign that scarlet fever has been present. In very mild cases of scarlet fever the desquamation may be so small in amount as not to attract attention, even when looked for rather carefully. There are other affections besides scarlet fever in which slight desquamation takes place.

Spread of Scarlet Fever.—Scarlet fever is not as infectious as was formerly thought. It is no uncommon experience to have two children sleep together until scarlatinal rash appears on one of them and yet the other child will not develop the disease. There is no doubt that the spread of scarlet fever can be prevented even in the household itself after it has gained an entrance. For this purpose, however, careful segregation must be practised. In a city apartment the end room of the house should be used as the sick-room and the doorway covered with a damp sheet rung out in chloride of lime. There is no pretence that this acts as a bacteriological prophylactic, but it does serve the purpose of warning the household to exercise extreme care and it keeps the dust of the sick-room from flying about the house. If possible, of course, a separate attendant should be provided for the patient. Where this is not possible the mother must be warned always to put on a special wrapper that completely covers her dress whenever she waits on the sick child. Before having any communication with the well children she should remove this wrapper and wash her hands carefully in lime-water, chloride-of-lime water, or in some good antiseptic solution.

Dispensaries Spread Infection.—In cities the dispensaries undoubtedly serve much more than do the schools to spread infectious diseases. Patients are crowded into clinic-rooms, where sometimes for hours children suffering from contagious diseases are kept sitting close beside others who are well. From this point of view dispensaries have probably done more harm than good in city-life. The doctors are not entirely blameless in the matter. Undoubtedly provision could be taken to avoid many of the dangers of contagion that exist at present. Another great source of contagion here in New York is the insanitary condition of the old school-buildings in many of the lower parts of the city. No proper place is provided in them for putting away cloaks and wraps. It is well known how easily clothing carries contagious material. Despite the most careful precautions, children from infected houses sometimes continue to come to school. All the scholars' wraps are hung close together and then the room is almost hermetically sealed absolutely no provision being made for drying or airing the garments. When one teacher was asked why she shut the wardrobe she replied that it was to keep in the smell. These small cloak-rooms are warm, and on rainy days they make excellent germ chambers. There should, of course, be provided in all school-buildings some airy place for drying the outer garments of the scholars.

Significance of Albumin and Casts.—The examination of the urine twice a day seems an unnecessary precaution in scarlet fever, since the

urinary findings give no assured indication that can be of assistance for treatment. There are many other diseases of children besides scarlet fever which cause albumin and casts to appear in the urine. Almost any febrile disease will produce at least albuminuria. Diarrhea and pneumonia often cause casts as well. The clinical sign of beginning scarlatinal nephritis is the puffiness under the eyes. It is not very important that the exact minute when a nephritis begins should be known. The scarlet-fever patient if properly cared for is exactly in the circumstances that are ideal for the treatment of nephritis. The room is kept at a warm and equable temperature, the diet is milk and other bland liquid foods and the skin is kept in good functional condition by frequent lukewarm baths. It is sufficient, then, to wait for the clinical symptoms of the development of the nephritic complication without the unnecessary trouble of so frequent examination of the urine.

Incubation Period.—Dr. Kerley said that as the result of careful observation of a series of scarlet-fever cases he had announced some time ago that the incubation period is usually five days. This time must be somewhat extended. In hospital cases the incubation period is sometimes less than five days, but in many cases it has been seven days, in some few twelve days, and in one case fourteen days, between the time of exposure and the development of the disease. In Dr. Kerley's experience the strawberry-tongue is not of such great diagnostic value as has been thought. It occurs in scarlet fever in the great majority of cases, but it occurs also in other affections. In some very mild cases the rash may be an extremely uncertain sign. A rash that lasts but six hours may be followed later by a desquamation that shows the case to have been one of genuine scarlet fever. The place to look for the rash, especially when it is either very mild or when it is just beginning, is the lower part of the abdomen and the upper part of the thighs. There is only one symptom that is absolutely pathognomonic of the disease, masmuch as it is always present. This is the congestion of the throat. If it is not present, then the case is not scarlet fever. Desquamation usually takes place in from four to six weeks. Scrubbing and applications of ichthyol and vaseline do not seem to hurry the progress of the desquamative process. Desquamation is liable to continue around the fingers for the full six weeks. There are marked variations of virulence even in the same epidemics of scarlet fever. The occurrence of one mild case in a family forms no guarantee that others which develop at the same time or as a result of contagion from the first case will also be mild. Mild cases may give a contagion that proves fatal even to older and stronger children, or to adults. No doctor who is attending a scarlet-fever case should take a maternity case. For the restlessness and irritability that develops as a result of the itchiness during the desquamative period, spongings and inunctions should be employed. Dr. Kerley knows from a personal experience of their use that they are extremely soothing and act as gentle but efficient antipyretics. In irritable children their effect is often marvelous. For acute suppression of urine Dr. Kerley has found that warm flushings of the colon are the most effective remedy. The solution employed should be of a temperature of 110° F.

Variations of Virulence.—Dr. Winters said that the variations in mortality from scarlet fever are most striking. At times an epidemic has been so severe that very few patients have recovered. Graves saw 80 cases without a death. Mortality statistics in good hands vary from 7 per cent. to 65 per cent. Notwithstanding the virulence of the disease, its contagiousness is not very marked. The isolation of no disease is so easy as scarlet fever. There is not very much danger of the physician carrying the disease to other patients. Dr. Winters himself has been seeing cases of the disease constantly for years, yet in no instance has he ever carried it to other places. Isolation even in a hotel is possible. Measles has a very diffusible contagium. That of scarlet fever is not, but it is much longer lived. Scarlatinal nephritis in private practice very seldom terminates fatally. All that is needed is simple treatment and ordinary care and patients almost invariably recover. Scarlatinal nephritis never occurs in the early stages of the disease. Albuminuria may exist at the beginning of the scarlet fever, just as it may exist in measles or any other febrile affection, but there is always an interval of absence of albumin before true nephritis occurs. Scarlatinal nephritis is often said to be specific, that is, to be due to the specific poison of the scarlet fever. There are certain features of the nephritis that seem to argue against this point of view. The renal affection develops especially in mild cases of scarlatina, and not always in the severe ones as might be expected. It develops in dispensary cases, not in hospital cases; it develops in the spring and fall and not in the winter. It is really due to a neglect of the care of the skin of the patient during convalescence. Owing to the desquamation the skin is not free to act and extra work is put upon the kidneys. In 100 cases the average time of its development was on the twenty-second day. It usually develops at the beginning of the fourth week of the disease or a little later. The history of the affection is that the child has been up and about while desquamation has been going on. The lesson of the affection is that the child must be kept in bed for at least six weeks. The first symptoms of the complication is always an elevation of temperature. This occurs twenty-four hours before any other symptom. This symptom is noted before any change in the urine takes place and before any puffiness of the evelids can be noticed.

Pathology and Treatment.—The suppression of urine which so often occurs in scarlatinal nephritis is due to the fact that the congestion of

the kidneys causes congestion of the Malpighian body. This closes up the capsule of Bowman and so shuts off the urine. The treatment of this condition is best accomplished by aconite. The indication is to lower blood-pressure, and so open up Bowman's capsule. This is accomplished in from twelve to twenty-four hours by the use of aconite. Adjuvant measures should, of course, be employed. Perspiration should be induced by steam-baths and by covering the patient with flannel. Every bit of the patient, especially the hands and feet, should be covered. The bowels should be cleared out. Under this treatment we may defy glomerulo nephritis to go on to suppression of urine and to uremia. Infusion of salines may be of benefit in other forms of nephritis and prove really a life-saving measure; but they are not indicated in scarlatinal nephritis where the glomerular lesion is so marked. The oldest treatment is still the best, and Sydenham's suggestion remains the surest, even for our generation.

In closing the discussion, Dr. Coleman Kemp said that normal salt solution hypodermatically injected does not increase blood-pressure, but does tend to relieve congestion of the kidneys. In observations made upon animals after large doses of antitoxic serums, this was certainly the case. Besides, it must be remembered that scarlatinal nephritis is not exclusively glomerular nephritis, but that other pathological changes besides those in the glomeruli have been noted as present. It is probable, then, that a remedy such as normal salt infusion, which has acted so favorably in other forms of nephritis, will do good in scarlatinal nephritis.

NEW YORK ACADEMY OF MEDICINE.—SECTION ON PEDIATRICS.

Stated Meeting, Held April 12, 1900.

Walter Lester Carr, M.D., Chairman.

Colic Intussusception.—Dr. John F. Erdmann presented a case of this kind. The condition is very rare. Intussusceptions are usually of the ileocolic or ileocecal varieties. The patient was first seen twenty-nine hours after the onset of pain. The pulse was then 116, the temperature 100° F., and the patient was very restless, had an anxious expression and complained of a good deal of pain. There was a tumor in the left iliac and lumbar regions which could also be felt in the rectum. The diagnosis of intussusception had been made some time before by the attending physician and all ordinary means of reducing the tumor had been tried without success, and it was decided to operate at once. An incision was made through the anterior sheath of the rectus muscle, which was then pushed aside and the posterior sheath incised. The condition was found to be an intussusception of the pure colonic variety. The greatest care was needed in making the manipulations necessary to reduce the tumor as there was a tear in the serosa one and one-half inches in the longitudinal direction and another one inch in width. After the reduction no attempt was made to plicate the mesentery or to stitch the colon in place. Inflammatory adhesions form very soon after such a condition and the colon is bound down securely by this means. The after history of the patient was excellent. There had been some tendency to herniation, that is, there has been a flat tumor about the size of the hand in the region of the scar which has, however, gradually reduced in size. For a time it seemed as though the inner stitches had given way too soon. Of late this condition has become so much better that there seems every probability that a true hernia will not develop.

This is the eighth case that Dr. Erdmann has operated on for intussusception. Fifty per cent. of the cases have recovered. In three of the four fatal cases the intestines were in a gangrenous condition when the abdomen was opened. The patients were operated on because all hope seemed past and friends pleaded that something be done. In none of these cases would Dr. Erdmann consent to operate now, as they were absolutely hopeless.

Congenital Lues.—Dr. Wachenheim presented a child nine months old, the youngest of four children, with the following condition: The abdomen was large at birth and the child had always been sickly, with a tendency to vomit. It had been very slow in development and the abdomen remained markedly large. Examination showed such a state of emaciation that the enlarged liver and spleen could be outlined by inspection through the abdominal walls. The liver extended downward almost to the crest of the ilium. The spleen extended three inches below the margin of the ribs. All the glands, the cervical, axillary, inguinal, and epitrochlear, were enlarged. There was a great deal of rachitis. The blood-picture was that of a mild condition of anemia. There was some inequality in the size of the red blood-cells although there was no true poikilocytosis. The eosinophiles were slightly increased in number but there were no myelocytes. The diagnosis was lues. It was necessary to exclude two conditions in making the diagnosis, *viz.*, leukemia and pseudoleukemia. The absence of marked changes in the blood-picture excluded these diseases.

Sporadic Cretinism.—Dr. Friedmann presented a case of sporadic cretinism. The child was thirteen months old and had been two months under observation. The first thing the mother noticed was that the nose was constantly full of mucus and that the child always breathed through its mouth. She also noted that the child was not as bright as other children and had not grown for five months. There was obstinate constipation, although the appetite was reasonably good. Examination showed that the child was a fairly marked cretin. The tongue was thick and protruded slightly. The lips were thick and were

open; the nose was flat and rather broad; the eyelids were puffy; the skin of the face thickened and coarse; the abdomen distended; the umbilicus prominent. The child weighs twelve and a half pounds now and weighed eight pounds at birth. Its temperature was constantly subnormal, between 95° and 96° F. One-third of a grain of thyroid extract was administered at first and then in ascending doses until two grains a day were being given. During the first four days of treatment the child lost two ounces in weight and became somewhat fretful. After eight days it had lost four ounces in weight, although the temperature had become normal and the constipation which had continued persistently for months was relieved. At the end of fifteen days the child had lost half a pound in weight, but had gained one inch in height. After twenty-five days the loss in weight amounted to more than a pound. The child was so restless that it rubbed the hair off the back of its head. At the end of about thirty days it began gradually to increase in weight and the restlessness subsided. The child has gained a good deal in brightness. It no longer breathes with its mouth open, and does not snore when asleep. Its expression has changed greatly for the better and its general appearance is much less suggestive of cretinism than it was two months ago.

Family Cretins.—Dr. Charles Hermann then presented three children of one family all of whom are cretins. The eldest child is six years old, the second three years and three months, and the third seven weeks. The parents are first cousins. Neither of them suffers from goiter, nor has any lack of thyroid. They have had ten children, of whom five are living, three of them being these cretins. Of the five dead, two at least, according to the history, were cretins. The youngest child is now under treatment and presents the preliminary symptoms of cretinism. The lips are somewhat thick, the nose flat and broad, the trunk large, the members short, the hair dry and scanty, the eyes far apart, the eyebrows deficient. The thyroid cannot be felt and the rings in the trachea are readily palpable. The child cries in a peculiar squeaky voice and the expression of the face, especially when the child cries, is somewhat characteristic of cretinism. Obstinate constipation exists and the temperature in the rectum is only 96° F. There is a glassy wrinkle in the skin on the dorsum of the hands and feet, which is characteristic of cretins.

In the discussion Dr. Northrup said that these cases are extremely difficult of recognition when the children are in the incipient stage. In a child like this there is really nothing about the appearance that is absolutely characteristic of cretinism or that might lead one to diagnose its existence unless for some extraneous reason its presence is suspected. The subnormal temperature might be a pathognomonic sign. Temperatures in weakling children have not been very extensively studied, however, and it is possible that they may run subnormal in them.

Continued Thyroid Treatment.—Dr. Noyes presented the history of a case of cretinism that had been under his observation for nearly five years. The initial improvement in these cases under the use of thyroid extract is well known. That which is of interest to the physician is to know the course that the case will take as the result of years of treatment. In the present patient improvement began at once. In three days the child, who was a typical cretin, had taken one and one-quarter grains of thyroid extract and it had a normal sweat. This is the first time the mother had ever seen the child sweat. In two weeks an umbilical hernia had entirely disappeared. At the end of a month two teeth had appeared and the child was bright and had begun to talk. In five months the child increased in height from twenty-four to thirty-two inches, the record of growth under the administration of thyroid extract in such cases. A year later the child was seen and some symptoms of cretinism were manifest, but promptly disappeared under thyroid treatment. The child had made a number of attempts to walk, but feared to trust itself alone, and so never actually walked. At the end of two years it was still slowly learning to walk and to talk, but had not lost its fear to trust itself on its feet. At its fifth year it could take a few steps, but was still very timid. A certain plasticity existed in the limbs which never quite disappeared. The little talking it could do was done slowly; in a word, there was evidence that there were defects in other organs besides the thyroid. It was manifest that there were hereditary developmental deficiencies in many parts of the body. While the child was pretty and bright-looking, there was a certain elvish, unusual look that attracted attention and would cause one to single the child out from among those of its own age. There is now left no sign of the cretinoid condition except a rather thick upper lip. As many children have this peculiarity it is not to be considered typical. In the discussion Dr. Caillé said that cretins should not be treated in hospital wards. Not only is it better for these weakling children to be kept at home where they can be specially cared for and well nourished, but they need the air and the sunlight more than it can be obtained in a hospital. If confined to a ward they readily develop pneumonia and the pneumonia often proves fatal.

Dr. Northrup said that he could only reecho what Dr. Caillé had just stated. Child-cretins should not be kept for treatment in a hospital as a rule. In one case recently where such a child had been retained for treatment in a New York hospital it developed a severe bronchial pneumonia. Only the very best of care for weeks in a private room enabled the staff to save its life and it was at once shipped to its home.

Diagnosis of Cerebrospinal Meningitis.—Dr. William P. Northrup said that there was in Boston in 1897 some 111 cases of cerebrospinal meningitis. During the same year he saw here in New York some thirty cases of the disease,

and is of the opinion that the epidemic noted in Boston also invaded this city. The disease usually occurs in the late winter and spring. In Boston the cases occurred from February to June, the greatest incidence of the disease being in April. The disease occurs in children and in young adults, being extremely rare under three years of age. It is most common between twenty-six and thirty. It is said not to be contagious, but in Boston one mother developed the disease three days after the death of her child. In two families others besides the patient originally attacked suffered from it. Second attacks have not been noted. The disease is undoubtedly infectious and has a specific germ. This germ seems to be the meningococcus intracellularis, described by Weichselbaum in 1887 and confirmed in a number of epidemics in recent years. It is difficult to understand how a disease that is confined to the central nervous system finds its way out of the patient to affect others. It is surmised that the avenues of exit are through the ears and the nose. In a number of cases an intracellular coccus has been observed in the secretions from ears and nostrils. The pneumococcus also causes a cerebrospinal meningitis. This is, however, a frankly purulent affection and recovery does not take place. Usually this pneumococcus meningitis is secondary, but at times it is primary. The infection takes place very probably through the nose.

Lumbar Puncture in Cerebrospinal Meningitis.—In 55 cases of cerebrospinal meningitis during the epidemic in Boston lumbar puncture was done. In 38 of them the meningococcus intracellularis of Weichselbaum was found in the cerebrospinal fluid; in 17 cases it was absent. All of the positive cases were examined before the seventh day of the week. Some of the failures noted in Boston, it is confessed by the observers, were due to the fact that in the beginning of the epidemic they lacked experience in the search for this micro-organism, and so were unable to find it. The unsuccessful examinations where the disease clinically was cerebrospinal meningitis were always made after the seventh day. In one case search for the meningococcus was successful on the twenty-ninth day. In some cases the micro-organisms are very numerous, in others they are very few. The meningococcus is usually found in the polynuclear leucocytes of the cerebrospinal fluid. The discovery of the meningococcus intracellularis in the spinal fluid is one of the best diagnostic differentials that we have for epidemic cerebrospinal meningitis. In the acute cases it is practically an infallible test. In the chronic cases it is not so sure, but it is of decided value. Because the meningococcus has been found in exudation from the ear and nose it has been thought that the bacteriologic examination of such secretions might be of diagnostic value in the disease. As the presence of secretion in the nose is constant it was thought that this would uniformly give assistance for the early diagnosis of the disease. Fifteen cases of cerebrospinal meningitis were examined to test this idea. In ten of the cases a loop inserted into the nose brought down a diplococcus resembling Weichselbaum's coccus and that grew within the cells of the secretion. Twelve ordinary hospital patients were taken for a control test. Two of these had in their nasal secretion a diplococcus resembling that found in the cerebrospinal cases. This diplococcus was decolorized by Gram's method. Examination of the nasal secretion cannot then be of any absolute diagnostic value.

Clinical Diagnosis.—The diagnosis of the disease despite advance in modern methods must depend to a large extent on the clinical symptoms. The most unfailing clinical symptom is the stupor which developed in all of the cases noticed in the Boston epidemic. Vomiting occurred in 70 of the cases. Delirium in 60; pain in the back of the neck occurred in over 80 per cent. of the cases, and was very much increased by turning of the head. Herpes occurred in 35 out of 111 cases. Petechiæ in 11. It must be remembered that epidemics of pneumonia sometimes accompany the epidemic of cerebrospinal fever. In the secretions of these pneumonias the meningococcus intracellularis has been found on a number of occasions. It is very probable, then, that the croupous pneumonia reported as frequently occurring with cerebrospinal meningitis is really a meningococcus pneumonia. A very marked clinical feature of the disease is the disturbance of the pulse-temperature ratio. A rather high degree of fever often occurs with an almost normal pulse.

Of cerebrospinal meningitis it may be said that lumbar puncture has about the same value for diagnostic purposes as has the sputum in pulmonary tuberculosis. Negative observations are not of very great value. Positive observations of the presence of the meningococcus intracellularis are the most unmistakable symptom we have in an early stage of the presence of this fortunately rare disease.

Therapeutics of Lumbar Puncture.—As to the therapeutic value of lumbar puncture there is a good deal of doubt. There are times, especially in tubercular meningitis, when the removal of some cerebrospinal fluid will put a stop to convulsions. In two such cases Dr. Northrup has seen a very favorable, although temporary remission, when every other method of treatment had failed to influence the course of the case in the slightest. In the very hopeless cases the procedure produces a favorable impression upon the parents of the child and it seems worth the while trying it rather than to stand idly by and tell the mother that nothing can be done. Remissions occur so often in the course of tubercular meningitis that the actual value of lumbar puncture as a therapeutic measure cannot very well be definitely decided as yet. Reported cases of benefit may well have been merely remissions of the disease that would have occurred if nothing had been done. Practically no danger is involved in the procedure. Dr. Northrup has now seen some

thirty cases in which lumbar puncture was performed from one to three times without any ill effects being noted and he knows of at least twenty more cases in which puncture was done with the same results. While its therapeutic value remains doubtful, there is no doubt about its diagnostic importance. It saves a deal of fumbling in diagnosis in very perplexing cases.

Technic of Lumbar Puncture.—Dr. Lewis A. Conner said that the technic of lumbar puncture is very simple, certain modifications only being required in the form of procedure according to the age of the individual. The spines of the vertebræ in the lumbar region are nearly horizontal and, although the ligaments in this region are dense, it is not difficult to push a needle into the subarachnoid space. This is quite large and connects with the corresponding space in the skull and with the ventricles. The subdural space, especially in the cord, is very small. In the adult the cord reaches nearly to the first lumbar vertebra. At the end of the first year it reaches almost to the third lumbar vertebra. The only precaution necessary in order to avoid wounding the cord is to insert the needle below its lowest point. The strands of the cauda equina are easily pushed aside by the needle and are not injured. Quincke advised that the puncture be made between the third and fourth or the fourth of fifth lumbar vertebræ. Stadelman prefers to go in between the second and third lumbar vertebræ. Fuehrbringer advises the space between the fifth lumbar vertebra and the beginning of the sacrum for the puncture. Jacobi suggests as a guide the line connecting the crests of the ilium. While Quincke advises the lateral position, Jacobi suggests putting the patient across the knees in order to separate the vertebræ as much as possible, and many of the Germans suggest placing the patient in the sitting posture with the head and back well bent. Where the lateral position is used great ventral flexion should be employed in order to separate the vertebral laminæ. The needle should be put in slightly to the right or to the left of the median line, but with a direction towards the median line. General anesthesia is not needed for the operation, the chloride of ethyl spray being sufficient to produce local insensitiveness. If the patient is very restless two assistants are needed. This point is of great importance. The most rigid asepsis must be practised, as for any other opening of a serous cavity. The needle and syringe should be boiled for ten minutes, and kept in a strong carbolic solution for several hours before the puncture. In children the needle must be inserted four to five centimeters, in adults from nine to ten centimeters. An ordinary antitoxin syringe needle is available for the purpose, but it should be carefully tested as to its strength for the spinal ligaments are tough and rather unyielding. The syringe should be attached to the needle as a handle. Gentle suction with the syringe is allowed. It must be remembered that some force is required to withdraw the needle. Accidents may happen which prevent the flow of the cerebrospinal fluid. The needle may become plugged, it may not reach the subarachnoid space, adhesions may exist between the membrane as happens sometimes in tubercular meningitis, gelatinous or waxy secretion may be too thick to flow. The removal of small amounts of cerebrospinal fluid never causes any symptoms. The removal of large amounts sometimes does. In brain tumor, when an extremely high pressure exists, its sudden relief is not borne well and may lead to collapse or to convulsions.

In the discussion Dr. Caillé said that he has now practised lumbar puncture in some sixty cases. The procedure is easy but requires some skill. It should not be done without assistance. For him the best position for lumbar puncture is the extreme flexion in the sitting position which may be called the bicycle position. This gives the most room between the vertebræ. The most favorable point of insertion of the needle in his experience is where the line connecting the crests of the ilia crosses the spinal column. A finger is placed on the spine above and another on the spine below the point of election. With these as a guide the needle is pushed in between them. The use of the syringe as a handle for the needle makes an excellent instrument for the purpose. Pathological curvature of the spine somewhat disturbs the landmarks, but does not render puncture impossible. In one or two cases second attempts had to be made to secure the entrance of a needle. In very fat children this may be necessary. The relief of pressure symptoms by lumbar puncture is not lasting. Its main purpose is that it clinches the diagnosis. Dr. Caillé has used injections of various substances into the subarachnoid space after the removal of a certain amount of cerebrospinal fluid. Salicylate of soda, iodoform and potassium iodide have been used in this way. While no harm has been done, no good seems to have been accomplished.

Dr. Northrup said that there is absolutely no danger in lumbar puncture. This had made him sufficiently confident to remove fluid in cases of hydrocephalus by direct puncture of the ventricles. There was the same tolerance of this procedure as of lumbar puncture. In one case he removed over a pint without causing any symptoms in the child.

Dr. Conner said that the pathogeneity of Weichselbaum's meningococcus intracellularis for cerebrospinal meningitis is not yet definitely settled. A number of bacteriologists doubt its specificity for all the epidemics of cerebrospinal meningitis that occur. Netter thinks it is not impossible that there may be other micro-organisms which cause epidemic meningitis.

In three cases Dr. Conner has practised injections for therapeutic purposes into the subarachnoid space. In none of them were there untoward symptoms except a slight febrile reaction. In the first case he used a saturated boric-acid solution, later he used Thiersch's fluid for the

injection. While this method does not promise very much it holds out certain therapeutic hopes in otherwise hopeless cases.

REVIEWS.

The American Year-Book of Medicine and Surgery. A Yearly Digest of Scientific Progress, etc., with critical editorial comments under the editorial charge of George M. Gould, M.D. Volume on Medicine. Philadelphia: W. B. Saunders, 1900.

This well-known year-book is issued this year in two separate volumes, one devoted to medicine the other to surgery. As former editions had already become somewhat cumbersome for consultation, the change is a decided improvement. Among the changes in the editorial staff for the present volume it may be mentioned that Dr. David Riesman has entire charge of the section on Pathology; Dr. Reynold W. Wilcox of New York and Dr. A. A. Stevens of Philadelphia assume the editorial management of the department of Materia Medica, Experimental Therapeutics and Pharmacology; Drs. Reed and Dr. Walter Jones of the Johns Hopkins Medical School replace Professor Abel in the department of Physiologic Chemistry.

The general character of the year-book and its well-known thoroughness, together with the careful editorial supervision given it, make it a valuable work for the ordinary practitioner. The review of certain of the subjects in last year's progress in medicine is excellently done. Tuberculosis in particular is treated with a completeness that brings out very clearly the recent views with regard to the hereditary transmission of tuberculosis, the seat and the development of primary tuberculosis, the significance of hemoptosis, the presence of tubercle bacilli in milk, in market-butter and the like. There is an excellent reproduction from the *Journal of Experimental Medicine* of Flexner's colored photomicrograph showing the streptothrix which is the cause of pseudotuberculosis hominis streptothrica. In general the plates in the volume are well selected and very beautifully reproduced. We note among others the plates of Koplik's spots, published in the Medical News of last year.

The chapter on materia medica is especially interesting because it contains a very complete review of the authentic information available as to drugs that have been recently introduced to the notice of the profession. This branch in particular is a decided improvement over that of previous years. With regard to the year-book in general it might be said that its value would be greatly enhanced if it were brought a little more up to date. There are practically no quotations after the first of July, 1899. For a 1900 year-book readers would be justified in expecting that at least three-quarters of the medical literature for 1899 be reviewed. This would not add greatly to the labor involved, once a beginning were made in the matter, and it would add very distinctly to the book for the busy practitioner.

BOOKS RECEIVED.

The Medical News *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* Medical News *will shortly appear.*

Diseases of the Eye. By Edward Nettleship, F.R.C.S. Revised and Edited by William Campbell Posey, A.B., M.D. Sixth American from the Sixth English Edition. With a Supplement on Examinations for Color-Blindness and Acuity of Vision and Hearing, by William Thompson, M.D. 8vo., 560 pages. With 5 Colored Plates and 192 Engravings. Lea Brothers & Co., Philadelphia and New York.

Manual of Operative Surgery. By Lewis A. Stimson, B.A., M.D., and John Rogers, Jr., B.A., M.D. Fourth and Revised Edition. 8vo., 293 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York.

Medical and Surgical Nursing. A Treatise on Modern Nursing from the Physician's and Surgeon's Standpoint. Edited by H. J. O'Brien, M.D. 8vo., 287 pages. G. P. Putnam's Sons, New York and London.

Atlas and Epitome of Special Pathological Histology. By Docent Dr. Hermann Durck. Authorized Translation from the German. Edited by Ludvig Hektoen, M.D. With 62 Colored Plates. W. B. Saunders, Philadelphia.

Diseases of the Chest, Throat and Nasal Cavities. By E. Fletcher Ingals, A.M., M.D. Fourth Edition. With 255 Illustrations. William Wood & Company, New York.

Fractures. By Carl Beck, M.D. With an Appendix on the Practical Use of the Röntgen Rays. With 178 Illustrations. W. B. Saunders & Company, Philadelphia.

Forty Years in the Medical Profession, 1858-1898. By John Janvier Black, M.D. J. B. Lippincott Company, Philadelphia.

Suggestions to Medical Writers. By George M. Gould, A.M., M.D. The Philadelphia Medical Publishing Company, Philadelphia.

A Manual of Obstetrical Technique. As Applied to Private Practice. With a Chapter on Abortion, Premature Labor, and Curettage. By Joseph Brown Cooke, M.D. J. B. Lippincott Company, Philadelphia and London.

A Manual of Obstetrics. By A. F. A. King, A.M., M.D. Eighth Edition, Revised and Enlarged. With 264 Illustrations. Lea Brothers & Co., Philadelphia and New York.

Twenty-second Annual Report of the Board of Health of the State of New Jersey and Report of the Bureau of Vital Statistics. 1899.

A Manual of Clinical Diagnosis by Means of Microscopical and Chemical Methods. By Charles E. Simon, M.D. Third Edition. Illustrated by 136 Engravings and 18 Colored Plates. Lea Brothers & Co., Philadelphia and New York.

A Text-Book of the Medical Treatment of Diseases and Symptoms. By Dr. Nestor Tirard. Adapted to the U. S. Pharmacopœia by Dr. E. Quin Thornton. 8vo., 632 pages. Lea Brothers & Co., Philadelphia and New York. $4.00.

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ORIGINAL ARTICLES.

THE TREATMENT OF SUMMER DIARRHEA IN INFANTS.

BY CHARLES GILMORE KERLEY, M.D.,

OF NEW YORK;

LECTURER ON DISEASES OF CHILDREN IN NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL; ASSISTANT PHYSICIAN TO BABIES' HOSPITAL.

ONE who has had clinical advantages among children in New York City during the hot months for several seasons necessarily comes in contact with a large number of cases of summer diarrhea. A brief review of observations made and conclusions arrived at may not be without value to those whose labors are more particularly in other fields.

Intercourse with physicians from various sections of the country, in post-graduate classroom, in consultation and in private practice, demonstrates that the true nature of summer diarrhea in infants is not appreciated by the rank and file of the profession. The erroneous teachings of the past appear difficult to break away from. The popular conception of the management of this disease is to give a dose of castor oil and then by any means possible to diminish the number of the passages, regardless of its effect upon the patient.

The somewhat comprehensive term, summer diarrhea, is used because it covers the subject matter better than any other. A classification founded upon the appearance of the stools is impossible as the appearance often changes from one hour to another. The age of the child, the previous diet, the nature of the infection, the stage of the illness, all influence the character of the passages. A classification based upon the lesion is only possible at the autopsy. At the onset of the illness no lesions exist. Bacteriologic examination of the stool is our only means of classification and our knowledge of the bacteriology of the intestinal contents in summer diarrhea is not very far advanced and for some time to come will not be of avail to the physicians who are treating the great majority of these cases. If they will believe, however, with bacteriologists and clinical workers in diseases of children whose opinions are worth anything, that in summer diarrhea we have a disease due to virulent organisms, much will be accomplished. In a child ill with this disorder we have a child poisoned. There may be a direct infection through the means of contaminated food, infected feeding apparatus, or by any means whereby bacteria may pass into the gastro-intestinal tract.

The extremely acute cases with excessive vomiting, purging, marked prostration and rapid loss of flesh, so-called cholera infantum, are no doubt due to direct infection. The infection may also take place by indirect or autoinfection. The food is unsuitable or given improperly. Indigestion results and a culture-field is prepared. Excessive heat plays a most important part in autoinfection. Through its influence the bodily functions are all depressed, the bile and the digestive juices, the natural disinfectants, are not furnished to the gastro-intestinal tract in the required strength and volume, with the result that the pathogenic organisms always present in the intestine are given an opportunity for vigorous growth and development. The undigested milk at the temperature of the body furnishes an ideal culture medium. We thus have at the commencement of the disorder a poisoning process at work with the *contents* of the intestine involved and not the intestinal structure.

Summer diarrhea differs from many other ailments of early life in that there is no tendency for it to get well if left to itself. It is a disease which must be treated upon the appearance of the first symptom and treated vigorously. If properly-directed treatment can be carried out promptly we can almost always relieve the patients before the bacteria and their products have produced inflammatory and ulcerative lesions, before grave changes have taken place in the liver and kidneys, organs which are particularly liable to become affected by toxic products in the circulation. Autopsies personally made upon 226 children dying with summer diarrhea show lesions which in extent and severity correspond very closely with the duration of the illness. In intensely toxic cases which die within two or three days, very slight changes are found in the intestines. Small local areas of congestion, a slight swelling of the lymph nodes, with here and there desquamation of the epithelium constitute the changes that have taken place. In prolonged cases which die after two to four weeks illness, ulceration to a considerable extent is to be found.

With the nature of the disease appreciated the rational treatment is simple. It consists chiefly in elimination and diet. Endeavor to remove from the digestive tract the bacteria and their products and to give nourishment which will not furnish a medium for their growth and development. If the case is of the normal type with green, loose stools containing undigested milk and mucus, a teaspoonful of castor oil or one grain of calomel in divided doses

(one-tenth of a grain hourly) should be given. If the case is not seen until two or three days have elapsed and the stools are frequent, from eight to twelve in twenty-four hours, the castor oil should be omitted. A smaller amount of calomel (one-fourth of a grain in one-twentieth-grain hourly doses) is indicated in these active cases. Cases are not infrequently seen in which the stools are infrequent—but two or three in twenty-four hours. The passages are usually very foul and contain a large amount of mucus. There is considerable prostration with low fever. When these symptoms are present active purgation is required and a teaspoonful or two of castor oil should be followed in twenty-four to forty-eight hours by a grain of calomel in divided doses. If vomiting is present neither the castor oil nor the calomel should be given until the vomiting has been controlled by the diet and stomach-washing.

The physician who wishes to do his full duty to the patient must stop the milk diet at once. It matters not whether the diet is breast milk or cow's milk, or whether the cow's milk is sterilized or not sterilized. It matters not whether the milk is peptonized or not peptonized. If the diet is condensed milk, goat's milk, or any of the meal foods containing evaporated milk, they must be discontinued with the first indication of illness. It matters not whether the stools are frequent or infrequent, neither does the character of the stool cut any figure, as long as it shows evidence of intestinal derangement the milk diet must be discontinued. The younger the patient the more imperative the necessity of discontinuing the milk. In some it will not be necessary to keep milk from the child more than twenty-four hours. Others will not be able to take it with safety for weeks. Other nourishment must be substituted and this can be done regardless of the age of the patient. It is useless to give laxatives and wash out the few bacteria and then feed milk to the hosts that remain. The milk is also harmful, although to a lesser extent, in that undigested curds form which pass the entire length of the intestinal tract, causing pain and exciting peristalsis.

If milk is to be discontinued what is to be the diet? The nature of the nourishment and the amount given depend somewhat upon the nature of the case. If there is vomiting as well as diarrhea the stomach must be washed and nothing whatever given for a few hours when a teaspoonful of water may be tried. If the water is retained it may be repeated every fifteen minutes. If it is vomited feeding by gavage[1] should be brought into use. If the water is retained it may be followed by an equal amount of dextrinized barley-water. The next step is to give increased quantities of dextrinized barley-water at long intervals.

If the case is one of diarrhea alone without vomiting I instruct the mother to give from three to five ounces of the dextrinized barley, either plain or salted, to which is added from one to two ounces of chicken, beef or mutton broth. These may be alternated with a teaspoonful or two of beef juice or one dram of liquid peptonoids which is added to the barley. Children soon tire of any one article of diet other than milk if it is the only nourishment given. The various substitutes suggested to be added to the barley change the taste and its use can be continued for weeks if necessary. The broths must be given cautiously as in some patients they have a decidedly laxative effect.

I have practically discontinued the use of the white of egg in the water. Many children fail to digest it and when such is the case it produces almost as much disturbance as milk. The amount of the diet selected that may be given at one feeding should correspond to the amount in ounces of the nourishment given in health but it should be given at shorter intervals. I allow a child to be fed every two hours if he will take it. If there is much thirst plain boiled water may be given at any time.

For the past year I have been using the barley dextrinized for the reason that if the cereal is predigested a stronger mixture can be taken and just so much more nourishment furnished the patient. If thick, non-dextrinized barley is used, or if a weaker barley or wheat or rice-water is used for a considerable time there is apt to be indigestion, fermentation and colic. My instructions to the mother are as follows: Add two even tablespoonfuls of barley or wheat flour to one pint of water. This is to be boiled twenty minutes and strained, boiled water being added to make the quantity one pint. When the mixture has cooled to the temperature of 100° F. add one teaspoonful of Cereo, which is a preparation of diastase made for this purpose. If barley is used in this strength it will furnish the child a food containing approximately .64 proteids, .15 fat and .4 soluble carbohydrates. If wheat flour is used the mixture will contain approximately .8 proteids, .046 fat and 2.4 soluble carbohydrates.

Upon resuming the milk diet grave errors are often made in giving too strong a milk mixture. The use of milk must not be commenced until the stools are nearly normal with not over three in twenty-four hours. Not more than one teaspoonful of milk should be added to each feeding of the cereal water for the first twenty-four hours. If this is well borne the quantity may be increased one teaspoonful every day. When six teaspoonfuls can be taken without harm the increase may be made at the rate of half an ounce per feeding every two or three days until the customary milk strength is reached. If there is a return of the diarrhea upon using the milk it must be discontinued at once. The mother or nurse must be instructed to do this on their own responsibility. In a few there will be no un-

[1] Gavage in Obstinate Vomiting, Kerley. *Archives of Pediatrics*, February, 1892.

pleasant results if the milk is commenced in from one-fourth to one-third the usual strength. It is a dangerous practice, however, to begin so strong a mixture. Time and again I have known the disease to return in a greatly aggravated form for this reason. After a severe attack of summer diarrhea many children will be able to digest but a very weak milk mixture for the entire summer. Every year we have a few who cannot return to the use of milk in the smallest quantity until October or November. In these cases scraped beef, beef juice and predigested cereals are our main reliance. Occasionally these cases will be able to digest and exist upon proprietary food until the advent of settled cool weather. A teaspoonful or two of one of the soluble proprietary foods may be added to each feeding of the dextrinized barley.

In the breast-fed the attacks are not apt to be so severe and they usually can return to the breast after twenty-four or forty-eight hours.

Among the long list of drugs which have been used and advocated for this trouble there are but few that are worth mentioning. I use practically but four, castor oil and calomel, already referred to, bismuth subnitrate (Squibb's) and opium. Salol, resorcin, the naphtol preparations, so-called intestinal antiseptics, furnish no aid in handling these cases, and are very apt to upset the stomach. The new astringents, tannigen and tanalbin, have a very limited field of usefulness. The disinfection of the intestine in the use of drugs through the means of the drug coming in contact with the bacteria and destroying them is not possible of accomplishment with any drug known at the present time.

The growth and development of bacteria may be prevented, however, by other means than by drug contact. A culture-field must be made as inhospitable as possible. This is best accomplished by withholding the milk diet and in the use of large doses of subnitrate of bismuth—bismuth subnitrate, 12 to 20 grains; aromatic syrup of rhubarb, 3 minims; water to make 1 dram. The addition of the aromatic syrup of rhubarb makes a very palatable mixture. The above amount is given early in a severe case, once in two hours to those less urgent.

Opium should always be given with caution and with special indications. It should never be given when the passages are less than four in twenty-four hours. I rarely give it unless the passages are more than six or seven. It is given only when the passages are very frequent or when they are large and watery. In the cases in which there is considerable fever and prostration, evidence of considerable systemic poisoning, from four to six passages are a benefit. These are to be looked upon as drainage. If this drainage is cut off by the use of astringents and opium the temperature rises, the patient becomes rapidly septic and dies, but the doctor has the satisfaction of having controlled the diarrhea. When opium is to be used I prefer to give it in the form of Dover powder; from one-fourth to one-half a grain every two or three hours for a child 8 months of age.

The cases already referred to in which there are infrequent foul stools, prostration and stupor require only calomel and castor oil, diet and bowel irrigation. For the fever, packs, baths and sponging are all that are necessary. In case a heart stimulant is necessary avoid alcohol, for the reason that it is very liable to derange the stomach and injure the already overworked kidneys. Strophanthus, strychnine and digitalis may be used as in other diseases when a heart stimulant is necessary. In cases of direct infection, with marked prostration and uncontrollable vomiting a hypodermic of morphine is always of service. For a child one year old 1-100 grain may be given with 1-600 grain atropia.

As with all useful measures irrigation of the colon has been overdone. I fail to understand why a colon that is emptying itself every thirty to ninety minutes requires washing out. If the physician will take the trouble to irrigate one of these active cases after a passage he will find the water returning clear. Irrigation is of the greatest service when the stools are infrequent and foul. It is also useful in active cases, those having from six to eight passages daily, particularly if there is any blood or much mucus. The irrigations are carried out at eight, twelve or twenty-four hour intervals depending upon the nature of the case. As a rule a one-per-cent. boracic-acid solution or a normal salt solution (heaping teaspoonful to the pint) is employed. If the amount of mucus is very large or if the stools contain blood a one-per-cent. solution of tannic acid is used instead. It is well to prepare two quarts of the solution to be used and discontinue when the water returns clear. The temperature of the solution should range between 95° and 100° F., except in cases of high fever where it may be used as cold as 60° F. When the child is moribund and athreptic, with low temperature and low vitality, hot water acts as a decided stimulant.

For irrigation a soft rubber catheter, No. 14 English, one that will not bend on itself if used properly, is attached to a fountain syringe, the bag of which should be held three feet above the patient's bed. The child must lie on the back or left side with legs well drawn up. The tip of the well-oiled catheter is passed into the rectum. When an introduction of two inches has been effected allow the water to pass in slowly. The water will distend the parts and facilitate the further introduction of the tube. Press the folds of the buttocks together until the colon is filled. This in a child of eighteen months of age will require twenty-four to thirty ounces of water. When this or a lesser amount, at least one pint, has passed in allow the solution to run in and out at the same time, the water being forced out alongside the tube.

A word regarding prophylaxis may not be

amiss. It is not enough that the child be given sterilized milk and breast milk; he must be made comfortable. The clothing should be of the lightest and on very hot days he should be in the open air in the shade, if in the country; if in the city, the coolest room in the house or apartment is far better than hot dusty streets. Whether in the city or country two or three fifteen-minute spongings with water at 60° F. will make the child ever so much more comfortable. Further, we know the digestive capacity is lessened during the heated term and the milk should be reduced in strength from one-fourth to one-third on the very trying days, adding water to replace the quantity removed.

The mother should always wash her hands most carefully with soap and hot water before preparing the infant's food, before handling nursing bottle, nipples or any nursing apparatus. The infection may be carried to the feeding utensils by the hands of the mother, other children may become infected, or reinfection take place in the one already ill. A child with summer diarrhea should not come in contact with other young members of the family, for summer diarrhea unquestionably must be placed in the list of communicable diseases.

ON METHODS OF CLOSURE OF ABDOMINAL INCISIONS.[1]

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The methods of suture to be considered in this paper are two, viz., the suture by layers and the so-called through-and-through suture, with a brief description of a combination of both.

The suture by layers may include as many tiers of stitches as there are anatomical strata, or more than one layer may be included in a single tier. For example, there may be a separate line of suture for peritoneum, muscle, fascia, and skin; or, in case of lateral incisions, each muscle may be separately sutured. In the latter case there would be a line of suture each for peritoneum, fascia, transversalis, internal oblique and external oblique muscles, and skin—six in all. In median cuts there would be but three, peritoneum, fascia, and skin; in cuts through the rectus, peritoneum, fascia, muscle, fascia and skin. The tier suture requires, of course, buried material which is either absorbable or non-absorbable. Questions of material, however, are not to be considered in this paper, except as influencing for good or for bad the course of healing. The principle of layer suture is accurate approximation of similar anatomical parts, peritoneum to peritoneum, fascia to fascia, muscle to muscle. A minor principle is the holding of these parts firmly together until they have become too strong to be separated from each other by coughing, vomiting, or other action of the abdominal muscles. This minor principle is carried out only by the non-absorbable or the slowly absorbed suture material. From the consideration of this point, simple catgut must be excluded. It may be a question whether the non-absorbable suture adds any strength to the scar-tissue from the very fact of its non-absorbability. In connection with the layer suture, methods must be discussed, questions of facility and rapidity of application, of greater or less liability to infection, of tendency to infiltrating hemorrhages, of bursting open of the wound, of ventral hernia.

In the through-and-through suture all the opposing structures are transfixed, at intervals of half an inch or more by the suture material. These sutures, when of absorbable material, may be left to take care of themselves. Usually, however, they are non-absorbable, and are taken out at the end of ten or fifteen days. This method of suturing does not bring about absolute accuracy of approximation to the opposing surfaces. It is a question for discussion whether its accuracy is not sufficient for purposes of firm and permanent union.

The chief virtue of the method of suturing is permanent strength of the union. A permanently strong and inelastic cicatrix depends for its formation first upon aseptic healing. Those methods are to be chosen in the first instance, therefore, which experience in actual operation upon man, rather than theory or even animal experimentation, has shown to be least liable to accidental infections. A second factor of permanent, firm union is said to be the accurate approximation of opposing surfaces, it being assumed that peritoneum joined to peritoneum, fascia to fascia, muscle to muscle, make combined a more solid and enduring cicatrix than, for example, peritoneum to fascia, fascia to muscle, muscle to peritoneum. The practical value of such an approximation is, I think, open to discussion, and permits a difference of opinion. A third and final factor is the strength given the line of union by the use of non-absorbable suture material. The importance of this factor is open to question.

The liability to wound infection, as contrasted in the two general methods, may be considered from the standpoint of theory and from the standpoint of experience. Whatever the deductions from the standpoint of theory or from that of experience, it is clear that the layer-by-layer suture unavoidably leaves dead spaces between the united structures. These spaces, filled with blood or other exudation, are more likely to become infected and, in fact, do more frequently become infected than if these collections did not exist. The blind spaces vary in width according to the dissection, the locality, and the structures themselves. The space between the sutured peritoneum and the next sutured structure, whether fascia or muscle, permits extensive and

[1] Read before the American Surgical Association, Washington, D. C., May, 1900.

easy extravasations, for separation of the peritoneum can be carried to almost any extent. For instance, I have isolated with my fingers the whole peritoneum, first distended with air from its muscular covering, leaving the greater peritoneal cavity as a tense translucent bag. I have seen a hemorrhage from the deep epigastric artery separate the peritoneum upward and backward so extensively that the patient died. I have seen time and again hematomata start up under the peritoneum and in the rectus from perforation of the epigastric vein or artery. This extravasation is at once controlled by the through-and-through suture, if not by one immediately contiguous to the bleeding-point, by one lower down or higher up.

Between the muscles blood makes its way much less easily and collections of fluid are less likely, therefore, to form; so between muscle and fascia, or between fascia and skin. Limited spaces, however, cannot fail to exist between all suture layers, the extent of these spaces depending, as I have said, upon the amount of dissection and upon the locality. When the sheath of the rectus is opened by a longitudinal incision, the spaces are limited only by the linine transversae and the lateral boundaries of the sheath itself. In median incisions, when the rectal sheath is not opened, the lateral separation is usually insignificant. The frequency of hematomata in wounds apparently dry is by no means inconsiderable. The larger the wound and the more vascular the region, the more likely the extravasation. I have found hematomata especially frequent after breast operations and limb amputations. They are by no means uncommon in dissections about the groin and in the scrotum are a serious complication, therefore, in the radical cure of hernia, hydrocele, and varicocele, at times even resulting in the loss of a testicle.

In the abdominal wound the liability to infiltrating hemorrhages increases with the increase in thickness of the muscular walls. One would, therefore, expect more trouble in the lateral than in median incisions, unless the lateral incision is made through the semilunar line. Pressure cannot be relied upon to check oozing in the abdominal wound, for pressure sufficient to be hemostatic cannot be exerted because of the very structure of the abdomen and its walls.

Wounds distended by fluid exudates are especially liable to suppuration. This statement hardly permits of argument. All wounds are, I believe, unavoidably affected by micro-organisms; but the micro-organism is easily taken care of when the wound is dry. Although it usually runs an aseptic course, even when distended with blood-clot or other exudate, it cannot be depended upon to do so, for the pathogenic organisms reproduce themselves in the confined fluid too rapidly to be taken care of and suppuration ensues. The course of wounds distended by exudates is frequently that outlined by this theoretical consideration. For a day or two the parts are swollen, reddened, and tender. This condition either subsides gradually or becomes more marked. Constitutional signs of infection follow and the wound is found to be suppurating. The usual methods of the radical cure of inguinal hernia require the application of sutures layer by layer. Practically all my suppurating abdominal wounds have followed this operation. They are by no means numerous. Indeed, the number of suppurating abdominal wounds and of ventral herniae has been extremely small, whatever the method of suture.

The through-and-through methods of suture absolutely prevent the formation of hematomata or other localized collections of fluid. Contaminations of such wounds must take place in the tightly-approximated surfaces or in the stitch-holes. Suppuration of such a line of suture is so rare in my experience that it may be said not to exist at all. As I have said, the layer sutures which I use in herniae furnish by far the larger number of infections. As to the value of accurate approximation by layer suturing, there is little to be said except upon theoretical grounds. I have observed many times the strength of long-continued peritoneal approximation. One sees it in inflammatory adhesions between intestines and between parietal and visceral surfaces of the peritoneum. Sometimes they are inseparable, other structures tearing before the peritoneum. In other cases the adhesion is separable even after a year's gluing. I recall an artificial anus formed of the descending colon which I separated easily with my fingers a year after the operation. On the other hand, a year after a lateral anastomosis the intestines were inseparable except by means of a sharp knife. As a matter of fact, some peritoneal surfaces become inseparable and others do not. The firmness of union between peritoneal and other surfaces is not less than between surfaces both of which are peritoneal, as seen frequently after operations in which intra-abdominal surfaces are left uncovered by peritoneum. So, too, when fascia is approximated to muscle there is no good theoretical ground for saying that the resulting cicatrix is not as firm as when the fascia is united to fascia. Indeed, it would seem that a thin edge of fascia united to a thin edge would be more easily separable than a broad layer overlapping another broad layer or overlapping denuded muscle. Clinically the union of fascia is broad and firm in the through-and-through suture. I have cut through many such scars. The cicatricial tissue is dense and firm, much more dense and unyielding in many cases than the original line. As a matter of fact, except perhaps in thick and fat abdominal walls, the through-and-through method gives a reasonably accurate adjustment of opposing layers.

The use of non-absorbable suture material

adds, it seems to me, a certain amount of mechanical strength to the large suture due to the suture material itself. The increased strength due to the paramount fastening together of the parts lasts for some time—long enough to ensure permanence of the cicatrix. Indeed, the wound cannot be separated until the buried sutures have been cut, or until they may have cut themselves loose from the structures which they unite, if they do so at all.

The great efficiency of the buried non-absorbable suture, whether of silver, of silkwormgut, or of silk, seems to me indisputable in that they assure an approximation long enough to make separation of the wound impossible. Furthermore, when structures like fasciae are thus held together, I can see no reason why these sutures should not add a permanent strength, for the material is not absorbed, there is no tendency to its exfoliation, and the enclosed tissues do not escape its grasp after the necessary pressure-absorption has taken place. The question of permanency of binding in connection with suture material is, however, really unimportant, for wound-strength must depend, and does depend, upon the cicatricial rather than upon the mechanical union of opposing surfaces.

This consideration seems to me important in the question of prevention of ventral herniae. I am convinced that early separation of the glued surfaces is a more frequent cause of hernia than the gradual stretching of the linear scar. Coughing, laughing, sneezing, and vomiting have caused the line of suture to give way within a few weeks of the operation or soon after the removal of the interrupted sutures. In such cases the formation of a hernia is due to a violent rending apart of the uniting surfaces, and no method of suturing would prevent it, excepting the burying of non-absorbable suture material, as will be suggested later. Such accidents are even more likely to happen when catgut is used in layer suturing. I have known, for example, of an abdominal incision giving way completely the night after it had been closed by four layers of catgut sutures. I have seen catgut ligatures become untied spontaneously before the completion of an operation. Dr. Jones reported to me recently that the catgut sutures became loose and gave way almost as soon as they were applied.

The rapidity and simplicity of the interrupted suture are self-evident. In surgery, other things being equal, methods which combine simplicity with rapidity are always to be chosen. I have followed Homans' method of applying the suture, threaded at each end and passed from within outward, and I think the fact that stitch-abscesses are practically unknown in my abdominal work is owing to this method.

For material I have used silver wire, silk, and silkwormgut. I used silver wire for several years, 1888-91, for the closure of all external wounds and for buried sutures. For no especial reason, except perhaps that the application of silver was slow, I began to use silkwormgut for external wounds and silk for buried sutures; these I have used ever since and I see no reason for giving them up.

Silk so seldom causes us trouble that we may say it never does. The cases in which it is exfoliated are a fractional part of one per cent.; I use it everywhere except in septic wounds.

The chief advantages of the through-and-through suture are: (1) Obliteration of dead spaces; (2) rapidity and simplicity of application. The chief advantage of layer suture is prolonged approximation with non-absorbable material. The advantages of both may be united in a very simple combination. This method I have used considerably when, from the size of the wound and from the thickness of the abdominal walls, especial immediate security is desired. By this method I first apply the interrupted sutures. These are placed about half an inch apart throughout the extent of the wound. They are then held tense, the opposing areas being brought together in such a manner that the deeper layers are closely approximated, the outer layers apart. The assistant holds these sutures by their long ends in such a way that no intestine or omentum can get caught between the intra-abdominal loops. The muscle and the fascia are still fully exposed. These are now united by interrupted sutures of silk in one or two layers. I content myself usually with one layer. The layers of peritoneum and fascia are well enough approximated by the long strands of silkwormgut held tense by the assistant. The fascia and the muscle are now united by a single line of interrupted silk sutures. When these are satisfactorily applied, the silkwormgut sutures are one after another tied. In this way no blind spaces are left and the muscle and fascia are united by permanent sutures of silk. I have used this method of suture only in exceptional cases. The more I use the method, the better I like it, and I am inclined to think that sooner or later I shall apply this method to all abdominal wounds.

The formation of ventral hernia after abdominal operations is dependent upon many causes, and the influence of this or that method of suture for good or for bad is, I think, much exaggerated. The frequency of ventral hernia is slight. In five years at the Massachusetts General Hospital there returned for operation only twelve patients with hernia in the scar following aseptic operations. Of these three were umbilical herniae which had recurred after a radical operation —a form of hernia especially liable to recur. In the other nine the wound had been closed by various methods. During the same five years there had been nine ventral herniae admitted after operations performed outside the hospital. Of the hospital cases—some 1580 in number—

only twelve reapplied for operation. Doubtless there were some that were operated upon elsewhere and others that never reported. The number returning to the hospital of the original entry seems to me surprisingly small. So in private operating, the number of operations upon herniae following my own operations and those of others is so small as almost to escape recollection. In three hundred abdominal operations a year, certainly not one per cent. is for ventral hernia.

A potent factor in the formation of ventral hernia is exertion too soon after the operation. I have recently seen a small hernia in a very large cicatrix appearing some two months after hysterectomy for a large fibroid. The patient was continually laughing and joking while at the hospital, and I fully believe she laughed the freshly adherent surfaces apart. In other instances a bronchitis, with violent paroxysmal cough, has started the protrusion. In such cases the method of suture is, in my belief, immaterial, as I have said before, unless the wound is united by buried, non-absorbable sutures.

The influence of thick and fat abdominal walls hardly needs consideration. The opposing surfaces of incision in such walls cannot, from their very nature, form a strong cicatrix. It is in such patients, if any, that buried sutures of non-absorbable material are essential.

Much more important than methods of suture, of material, of careful approximation, are the prolonged abstention from acts which drag upon the scar and tend to draw its opposing surfaces apart, the recumbent position for four weeks in cases naturally prone to hernia or to a recurrence, the radical cure of hernia, the union of long incisions through muscle, all operations upon thick and fat abdominal walls, all wounds in which muscular contractions tend to separate rather than to draw together the opposing surfaces, in fact, all cases of doubtful wound strength. Incisions through the abdominal wall high up do not require the prolonged rest that do those in the lower abdomen.

Another important thing is abstention from labors and exercises which necessitate increased pressure upon the scar tissues; for three months very moderate muscular exercise, beginning with those acts which do not especially use the abdominal muscles should be indulged in. Particular attention must be paid to supporting the wound in attacks of bronchitis with violent coughing. It is well also to advise the patient to support the wound with the hand in coughing and sneezing. The efficiency of abdominal supporters is in my opinion questionable. I always use them, if not for their mechanical, for their moral effect. Moreover, the inference that a hernia results from their non-use is so universal among laymen that the prejudice must be heeded. The chief advantage of an abdominal supporter is in the general aid it affords the abdominal muscles in supporting the viscera, rather than in any especial strength it gives the scar tissues of the incision. Direct pressure by a pad upon the wound aids in stretching it, especially if the pad is narrow and thick.

The choice of methods of closing incisions and the choice of material must be expected to excite difference of opinion. One surgeon may be unfavorably impressed by one or two bad results following a certain method and condemn it too hastily, returning to a method less efficient perhaps in the hands of others. The consensus of opinion may favor methods which are really faulty and which time alone will demonstrate as faulty. For example, my first suppurating radical operation for hernia followed my first use of kangaroo-tendon, yet I was then, and have been since, favorably impressed by its excellent qualities. On the other hand, the frequent exfoliation of silk seen by some surgeons leads them to condemn its use for buried material; yet I am convinced that the advantages of silk and other non-absorbable material are so great that with renewed experience and with improved asepsis no other will be used.

Sooner or later only that method will prevail which has stood the test of time. The method most likely to stand this test is that which combines with strength simplicity and rapidity of execution.

THE CONSUMPTIVE IN LOS ANGELES.

By WM. H. DUKEMAN, M.D.,
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There are from ten to twenty thousand tourists who come to Los Angeles annually. I am informed that the greater number come here for their health and remain in this balmy climate a time varying from a few weeks to several months, or a year or two, while many others come here to make this their future home. Among those who are sent here for their health, the phthisical predominate; very many of these are in an advanced stage of the disease, and are too far gone to derive any benefit whatever from climatic influences. It is a very sad mistake to send such persons so far away from their home and friends. Their physicians, knowing that these persons are beyond help from any source, should not accede to the patients' demands to try a change of climate thousands of miles away. Very many such persons arrive here so exhausted from their long journey that it is a very sad sight to see them, sometimes removed, as they are, from the train on a stretcher and taken to their apartments in an ambulance, gasping for breath in the final struggle for a last chance—perhaps only a few days, and then they are returned to distant homes in a casket.

If the consumptive in the early stage of his disease desires to come to California, he should seek the country and not locate in the city, as do the greater majority. It seems that they are under the impression that all that is necessary

for them to do to regain their health, is to get into Los Angeles and then they will get well. Under such a misapprehension they hunt up some cheap lodging-house, a dreary, cold, damp room, without any way of heating except by the abominable kerosine-oil-lamp stove; the apartments infected, perhaps, by some previous unfortunate, who also had a mistaken idea about going to a health resort to regain his health. Los Angeles has scores of such rooming houses, which are really more dangerous than smallpox pest-houses and in such places there are to be found many persons seeking the hoped-for benefits to be derived from a change of climate. Notwithstanding how ridiculous this may appear to the reader, nevertheless it is a fact to be deplored. If such invalids were educated by their physicians at home to avoid the cities and go out in the country, where they would derive the full benefit of a climate, the deplorable affairs above related would not so largely exist.

Los Angeles City should not be considered as a health resort for the consumptive for the following reasons: First, it does not make any pretense to said claims. Second, its sanitary conditions are not such as would warrant such claims. The sewerage system is not what it should be. Los Angeles covers an area a little more than seven miles square. It is yet a young, rapidly-growing city, not having the regulations and care of a city having one-fourth the area. The streets are dirty; they do not have the natural cleansing system, the occasional rains, to wash and carry away the constantly-accumulating filth in the streets. In the business portion of the city the artificial system of flushing, such as are found in the Eastern cities, is not perfected. A few hand-sweepers are scattered over the business portion of the city, but the space that they are obliged to cover to keep clean does not allow them to make even a respectable showing for the hard work done.

While there is an ordinance prohibiting expectorating on the sidewalks and street-cars and public meeting-places, it is not enforced, and the sidewalks in the business portion of the city are never washed, except during the winter months, when an occasional rain does the work. For eight long, dry months it is the same old dust, tossed and re-tossed about from sidewalk to street, and *vice versa*, and, with the aid of women's long-trained dress-skirts, the tuberculous sputum is kept in a pretty active state to disseminate the infection everywhere.

Another grave source of infection is the employment of the consumptive in the various channels of trade, such as clerks in the various retail stores, and most disgusting and abominable are the consumptive cooks and waiters in the many restaurants and eating-houses. The consumptive school-teacher, of which Los Angeles has many, should be absolutely prohibited; some sister cities have taken this step and I am in hopes that Los Angeles will speedily follow. Every teacher who makes application for employment in the public schools should be subjected to a rigid and thorough physical examination, as well as a microscopical examination of the sputum, before being accepted.

The dairies are inspected and every tuberculous cow is slaughtered; yet scattered all over the resident portion of the city are many tuberculous persons who keep a cow; they do their own milking. As the cow gives more milk than they require for their own use, the surplus is peddled around and sold to their neighbors. As these persons are generally not cleanly in the handling of the milk, I consider this a greater source of spreading the infection than the same method of spreading typhoid fever. This should be prohibited.

For the benefit of the public, as well as of the consumptive who chances to come under my care for treatment, I impress upon him the necessity of living in the country and, if he desires to get well, he must of necessity give up his time to the work of getting his health. To all such patients I supply written or printed rules or general advice, that they may not forget their duty to themselves, as well as to others.

The following is a copy:

General Advice.

1. You must live in the country and there make every effort to try to get well.

2. A patient who tries to get well has ten times as many chances of getting well as the one who is careless and indifferent.

3. You must avoid worry, anxiety and excitement.

4. Be hopeful and cheerful, for your disease can be cured if you will but do your duty in strictly following the advice here given.

5. As a rule, do not leave the house during the winter months until one hour after sunrise. Live out-of-doors all day. Remain in-doors only on rainy and very windy days. Remain in the sunshine as much as possible, and a greater part of the time recline on a couch or in a hammock in a comfortable position; protect your head from the sun's rays, the rest of the body lying bathed in the warm rays of the sun.

6. Always breathe through the nose and take your breathing-exercises regularly, as I have instructed you.

7. Avoid dust as you would rain and dampness and all places where the air is bad, such as theaters, concert-halls, or any crowded meeting-place, and lodging-houses.

8. Take your walking exercises regularly as prescribed, but never walk when you are tired or when you have a high fever (temperature 100° F. or over).

9. Dress neatly. Be clean and comfortable, but never wear a chest protector, as they are injurious; wear woolen undergarments as well as woolen socks and thick-soled shoes to keep your feet warm and dry.

10. Never stay or sleep in an overheated room. In this climate, however, in the mornings and evenings during the winter months, you should

have a small fire to keep your sitting-room comfortably warm, at about 65° to 68° F. Do not heat your room with an oil stove.

11. Never use your sleeping-room as a sitting-room. Keep all the windows open in your sleeping-room all day long and one window open all night. On cold evenings close the windows a little before sundown and then when you go to bed open one window, for you must have fresh air while you sleep. Fresh night-air is as good for you while you sleep as is day-air while you are awake.

12. Retire every night before 9 o'clock. Have at least nine hours sleep; when thoroughly rested, get up any time after 7 A. M.

13. Never expectorate any place where it can dry. Indoors always expectorate in a spittoon which is partially filled with water containing some antiseptic in solution, such as carbolic acid (teaspoonful to pint of water) or some other antiseptic. When you cannot conveniently get to the spittoon, use your pocket-flask. Never swallow your expectoration. Never expectorate in your handkerchief, nor use the same handkerchief to wipe your nose which you have used to wipe your mouth. Always cover your mouth with your handkerchief while coughing or sneezing. Never cough while at the dining-table; by a little effort you can suppress the cough.

14. Never kiss anyone, for your disease is infectious.

15. Keep your teeth clean by brushing them after each meal and use your mouth- and nose-wash night and morning, as advised.

16. Take a warm bath twice a week, to be followed by a rapid sponging with cooler water and a vigorous rubbing with a rough towel. If you are too weak to do the latter and you do not have an attendant, rub your entire body with alcohol.

17. Never use tobacco in any form. Never use any alcoholic beverages without the special directions of your physician.

18. Coax your appetite with a varied nutritious diet, as per diet-list given, and eat all you possibly can. A good nutritious diet, plenty of fresh air and sunshine are the best medicines.

19. Should there be any intercurrent symptoms, such as indigestion, diarrhea, constipation, restless nights, increased cough, pain, blood-streaked expectoration, do not be alarmed, but notify your physician without delay.

20. By carefully following the above instructions, as well as the advice given you at the office, the chances of your getting well are *greatly* in your favor.

In the past I had placed more or less faith in certain drugs as curative agents in this disease; I have tried them all, have found them all wanting, and am convinced that no one remedy is anything near a specific, and the serum treatment less valuable than any. My main hopes are to induce the patient to go and live in the country, treat symptoms as they arise, eat plenty of easily digestible nutritive food, especially milk, eggs and beef. One patient who ate as many as ten to twelve eggs daily for months recovered without any medicine other than a digestive mixture. I insist on patients living an easy, regular life in the open air and sunshine. In fact, if I can impress them with the absolute necessity of giving up everything else and employ themselves in taking every precaution against negligence and using every effort in trying to get well, improvement generally follows.

ADDRESSES.

THE EVOLUTION OF THE MODERN PHYSICIAN.[1]

By WILLIAM ALFRED ELLISTON, M.D.,
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It is twenty-six years since this great Association met in East Anglia in the city of Norwich and it speaks for its ever-growing importance and utility that on that occasion there were some 6000 members only, and the scientific business of the meeting was conducted in four sections. On this occasion, the first meeting of the nineteen hundreds, the members have increased to over 18,000, of whom 4000 are members of our Colonial Branches, and the scientific work needs thirteen sections.

Since the last annual meeting this Association has lost two members of great distinction, one full of years, "who had labored well far into the evening of life"; and the other cut short in his career, but yet with a record of great distinction. All who were present at the Edinburgh meeting in 1898 will remember the cordial hospitality of the President, Sir Thomas Grainger Stewart, and the conspicuous ability with which he conducted the business of that large gathering. In the death of Sir James Paget the profession has lost one of the greatest and most philosophic surgeons of the age, and East Anglia one of her most illustrious sons. His high character and great learning alike endeared him to the whole profession. His early scientific contributions, and particularly his discovery of the trichina spiralis in muscle, while yet a student at St. Bartholomew's, gave promise of a career which has been fully realized.

Reflecting with mixed feeling upon this experience, I propose to-night to briefly touch upon some incidents in the developments of the science of British medicine and the evolution of the modern physician. I use the term physician in its broadest sense of the type, now considered an ideal one, as illustrated in literature by the rare delineature of Dr. Lydgate by George Eliot in "Middlemarch," and of Dr. Maclure by Ian Maclaren in "Beside the Bonnie Brier Bush," and as admirably portrayed in art by Mr. Luke Fildes in his strikingly pathetic picture of "The Doctor."

[1] President's Address, delivered at the Sixty-eighth Annual Meeting of the British Medical Association, August 1, 1900. (Abstract).

Down to the period of the commencement of the sixteenth century England had taken no share in the scientific advancement of the Continent, and for almost a hundred years later no discovery of any importance was due to English research, the profession was busy as a whole in acquiring protection for their rights and privileges.

The continuous progress of British science commenced with the return of Thomas Linacre to Oxford from the Italian universities, whence he came imbued with what was termed the "new learning," then recently introduced by the Greek professors, who had been attracted to Italy. At this time the learned of all countries were profoundly impressed by the recent discovery of America, by the scientific discoveries of such men as Copernicus and Paracelsus. The printing press was changing the conditions of life, and literature became the common property of all.

The great event in the sixteenth century, so far as medicine is concerned, was the success of Thomas Linacre in persuading the King to grant a charter to a small body of medical graduates, who were thenceforth called the Royal College of Physicians. He succeeded, it is said, principally through the great and powerful help of Cardinal Wolsey. The charter of the Royal College of Physicians was granted September 23, 1518. It gave them the sole power to license to practice physic in London or within seven miles radius, with other privileges, which were confirmed by a statute of Henry VIII., and extended to the whole of England. Linacre was the first President, and he held office to the end of his life.

In 1540 the Barbers and Surgeons were united by Act of Parliament 38 Henry VIII., cap. 42. They were incorporated as the "Maisters or Governors of the Mysterie and Commonalitie of Barbers and Surgeons of London." Thomas Vicary, Sergeant Surgeon to Henry VIII., who had been previously Master of the Barbers' Company, was the first Master of the combined companies. The company employed Holbein to paint a picture with the King on his throne, with his two physicians, Sir William Butts and Dr. John Chantre, with his apothecary kneeling on his right, presents the Act, which is painted with a seal as if it were a charter to Vicary, who, with fourteen other Barbers and Surgeons, is on his knees. In 1543 the irregular practitioners of London were protected by Act, and became one of the corporations of that city, and both by royal charters and by Acts of Parliament exercise the power of granting license to practice medicine. In 1505 the Royal College of Surgeons of Edinburgh was founded, and in 1599 the Faculty of Physicians and Surgeons of Glasgow.

Soon after the birth of the new learning, the work of Vesalius, the brilliant young Belgian, aided by his contemporaries Fallopius and Eustachius, raised anatomy to a science based upon the dissection of the human body itself, in addition to that of animals.

In the sixteenth century there were already established physicians, surgeons, and apothecaries. The surgeons were associated in their Guild with the barbers and the apothecaries with the grocers. While the physicians were men of education, cultured according to the education of the time, the surgeons and apothecaries were not a very highly educated class, and they remained so, with few exceptions, until the rise of the nineteenth century.

It was at the very commencement of the seventeenth century that the original research of two great English physicians, Gilbert and Harvey, completely altered the position of our country in scientific advance. Hitherto there had been no contribution of importance; from this time, however, a complete change came over the scene; and from that day to this our countrymen have taken a conspicuous part in the solution of the many scientific problems and discoveries of the last three centuries. Our East Anglian county of Essex has the honor to be the birthplace of one of these illustrious physicians and the resting place of both. William Gilbert was born and buried at Colchester. At Holy Trinity Church there is a monument to his memory. He died unmarried, at the early age of 57, in 1603. William Harvey died in 1657, and was buried at Hempstead, in the same county, in his 80th year.

In relation to the fame of Gilbert and his researches, the poet Dryden wrote:

"Gilbert shall live till loadstones cease to draw."

At the time of Gilbert's death there were three men living, all in the prime of life, who profoundly stirred the scientific world—Francis Bacon, afterwards Lord Bacon, was 42 years of age, and was representing Ipswich in Parliament; Galileo, 39 years of age, and had recently brought distant worlds into view with the telescope; and William Harvey, the discoverer of the circulation of the blood, was 25 years of age.

The microscope was as yet undiscovered. The number of pulse beats was not measured by a watch until nearly a century after Harvey's time. In his day, according to Dr. Norman Moore, physicians contented themselves with estimating the character of the pulse rather than its precise rate. Specialism as now understood did not exist, and Harvey was a surgeon as well as a physician. He performed surgical operations to which he frequently refers. The brilliant work of Galileo, Gilbert, and Harvey, the awakening philosophy of Francis Bacon in this country and Descartes in France, gave an impetus to original research and the investigation of causes that was remarkable in upsetting ancient traditions, and little by little real observation and experiment took the place of mere authority.

It was about this time that a small body of

students assembled at Oxford in 1645, who were later, in 1662, to be known as the Royal Society. It was established as an association of men interested in the development of mathematical and physical science. It is the oldest scientific society in Great Britain and one of the oldest in Europe. Italy had already established two societies in the time of Galileo and Torricelli. In Germany the Imperial Academy of the Curious in Nature was founded in 1662. The famous French Academy of Science in 1666 was legally established by the French Government. All these societies greatly influenced scientific research, and many men who were hitherto unable to publish, now read papers at their meetings.

Practical medicine in Great Britain was developing in this country; a pharmacopœia had been issued; cinchona bark was introduced; botanical gardens were established. The teachings of Francis Lord Bacon, and subsequently John Locke, influenced the direction of thought, while the great learning and superb common sense of that great physician, Sydenham, gave effect to the general advance of this period.

In surgery the growth was slow, principally through the general want of knowledge of anatomy acquired by dissection; but two Englishmen had distinguished themselves in this branch—Nathaniel Highmore and Thomas Wharton—the former discovering the cavity in the superior maxillary bone which is still known by his name; and Thomas Wharton, who discovered the duct of the maxillary gland which is still recognized as Wharton's duct.

The man who of all others at the early part of the eighteenth century gave an impetus to medical education was the illustrious Boerhaave, who at the University of Leyden attracted students from all parts, and particularly from this country. He was elected Lecturer in 1701, and a few years later occupied the Chair of Chemistry. He shares with Dr. Hales, the great English chemist, the honor of founding the science of organic chemistry. So highly was Boerhaave esteemed by his fellow-countrymen that upon his recovery from a serious illness in 1722 there was a general illumination of the town of Leyden.

In London there was no concrete medical school until quite late in the century. William Hunter came to London and commenced to lecture in 1747, he became a member of the Corporation of Surgeons, was appointed Obstetric Physician to the Middlesex Hospital in 1742. He is stated to have been an early riser and a man of untiring energies. He was undoubtedly the first great teacher of anatomy in London, and we owe his selection and advance to Dr. James Douglas, an anatomist and obstetrician whose name is associated to this day with modern anatomists as the discoverer of Douglas pouch.

The advancement of medicine and the allied sciences in the eighteenth century commenced with the contributions of Boerhaave and Hales in organic chemistry, while Buffon taught natural history, and the Swede Linnaeus patiently worked out the minute characters of animals and plants. In physics the Scotch physician Black proved the amount of heat dormant in water and steam, which Watt afterwards applied to the steam engine. Electricity was greatly advanced by Benjamin Franklin, the American, who attracted lightning from the sky and worked with it in his own laboratory. Galvani found the wonderful power hidden in the nerves of the frog, and Volta showed how powerful electricity could be produced by two metals placed in acid and water, and this could be carried along a wire of any length which touches the battery at both ends. In physiology great advances were made by Haller, Bonnet, and Spallanzani. John Hunter, by his untiringenergy, industry, and perseverance, founded the science of comparative anatomy, and as an anatomist and as a practical surgeon built himself an everlasting fame.

The most remarkable scientific advance was undoubtedly in the science of chemistry. Almost to the last quarter of the century the theory of "phlogiston" had confused and mystified the researches of the many great and distinguished scientists who had worked in this direction. It is highly satisfactory the important part played by our countrymen in the elucidation of truth. The discovery of the gases which enter into the combination of air, water, and fire transferred the alchemy of old into the modern science of chemistry. It was due to the discovery of Black, Priestley, and Cavendish, and the independent work on similar lines of the great Swedish chemist, Schiel—himself a practising apothecary—that enabled Lavoisier to recognize the value of their discoveries and proclaim their effects upon science in his "Elements of Chemistry." At the early age of 51 this philosophical chemist was guillotined by his countrymen in 1794 during the French Revolution.

Black discovered carbonic acid in 1756, Cavendish hydrogen in 1766, Rutherford nitrogen in 1772; and it was not until 1774 that Priestley—a Nonconformist minister at Leeds—discovered oxygen. It was also independently discovered by Schiel in 1775. They both deserve credit. Priestley's discovery was made with red oxide of mercury; he heated it and found that a gas came off, which he collected and he experimented with two mice, and he found that they breathed it and lived much longer than in ordinary air; then he breathed it himself, and found he felt singularly light and easy for some time after. "Who can tell," he writes, "whether this pure air may not become a fashionable luxury. As yet, only two mice and myself have had the privilege of breathing it." It is only of recent years that the great value of the inhalation of oxygen gas has been recognized and utilized in the treatment of certain diseases of the heart

and lungs. I think many of us could bear testimony to its life-saving properties in cases which appeared hopeless.

The education of Edinburgh was far ahead of London. Medical societies and periodicals flourished there before coming south. There were medical societies in Edinburgh as far back as 1720. In London there were societies of 1753 and 1764; they were both small societies, and disappeared after Hunter's death. The only medical society in England, outside London, was the Medical Society of Colchester, founded in 1774. The absence of societies was much felt by earnest practitioners desirous of progress. Dr. Edward Jenner belonged to a medical society which met at the Fleece Inn, Rodburgh. Papers were read on medical subjects, and the members afterwards dined together. At these meetings Jenner read papers on various subjects. He also belonged to another society, which met at the Ship Inn, Alveston.

In London in 1783 there were five lecturers in anatomy, three lecturers on surgery, and three lecturers on the practice of medicine. The great medical schools of London and of the provinces have almost all been established since this period, and indeed most of them in the present century, as well as many of the useful universities now existing in the United Kingdom. Learned societies in medicine from this time became established, and they now exist in all parts of the kingdom.

The eighteenth century closed with an immense advance all round in general science, and particularly in chemistry and electricity. The last two years were distinguished by remarkable observations in physics upon the nature of heat; when Count Rumford boiled water and Davy melted ice by friction. The nineteenth century opened with a galaxy of talent devoted to scientific investigation in almost every department, which has resulted in great benefits to all knowledge. At the commencement of the century there was no illumination by gas or electricity, no ignition by lucifer matches; there was no railway or steamboat communication by land or sea; there was no electrical communication by telegraph or telephone, no electric light, no anæsthetics, no sun pictures, no knowledge of the intimate connection between electricity and chemical change. The century had but just turned when Sir Humphry Davy, then a very young man, gave brilliantly in rapid succession the discovery of nitrous oxide gas, electrolysis, the discovery of the metals potassium and sodium, the safety-lamp, and with Wedgwood the possibility of sun pictures. Dalton gave his atomic theory to chemistry, Malus the polarization of light, Ritter the chemical rays, Sir W. Herschell his dark heat rays, Young his valuable contribution to light, Oersted and Faraday their observation on electric magnetism. The French school, with Cuvier, Lamarck, and St. Hilaire, greatly advanced physiological science; while a little later, in the year 1832, Liebig discovered chloral and chloroform, and among his other herculean labors in various directions he added to our knowledge of organic chemistry by tracing the changes which food undergoes in our bodies, and studied which kinds are converted into fats, muscle, blood, or sugar in our system.

Of the physicians and surgeons in active practice there were many of great distinction; Lettsom, Matthew Baillie, Edward Jenner, James Gregory the younger, Edward Rigby, Cline, Abernethy, Sir A. Cooper, Sir Charles Bell, and many others of scarcely less eminence. Auscultation was then unknown in this country; Avenbrugger, of Vienna, had in 1761 published his work recognizing diseases of the chest by percussion; his ideas were ridiculed until 1808, the year preceding his death, when Corvisart translated it into French, and it rapidly attained a European reputation. Quickly following in 1816 Laennec, a French army doctor, invented the stethoscope and published his "Traité de l'Auscultation Médicale." Edward Rigby, Sheriff of Norwich in 1802, had recently published his work "On Uterine Hemorrhage," which made him famous at home and abroad. Bancroft, who left England to settle in Jamaica, in 1811, published his "Essays on Yellow Fever"; and of these Murchison says: "In his 'Continued Fever' no work ever effected a greater revolution in professional opinion in this country." The spontaneous or autochthonous origin of pestilential disease was then the generally accepted one, though the doctrine now prevalent of the continuous reproduction of a virus existing ab externo had been stated in the most precise terms by Eggerden, a Prussian physician, as early as 1720.

The ever-growing importance of surgery as a special science is recognized to the full at the present day. The long roll of eminent surgeons of later days commenced with several distinguished pupils of John Hunter. In the early part of the century there were three surgeons then practising who exercised an enormous influence at the time—Abernethy, Astley, Cooper, and Charles Bell. Abernethy was four years senior to Cooper, and Charles Bell six years younger. Of them both Abernethy and Cooper had great fame as lecturers and bold and philosophic surgeons. The former was the founder of the distinguished school of St. Bartholomew's while the latter was the surgical hero of the Borough United Hospitals until his succession to the school of Guy's Hospital, which thenceforth became a separate and distinct school from that of St. Thomas's.

The important legislation of the nineteenth century was the Apothecaries Act of 1815. This Act has been proved to be one of the greatest boons ever conferred upon the medical profes-

sion, and whatever may be the sentimental objection to a learned profession being connected with traders, we are bound to remember that to those who sought the Act of 1815 we are indebted for a reform which has been far reaching in its results. Previous to this Act the education of the medical practitioners of England and Wales was entirely optional on their part, and although many of them possessed degrees or licenses of the Universities or Colleges, the greater number possessed no such qualification, and many of them were wholly illiterate or uneducated. About the year 1850, a preliminary examination in arts was instituted as a necessary and independent requirement before proceeding to the medical curriculum. In 1858 the Medical Act became law, and by this Act the L. S. A. of London was permitted to practice through Scotland or Ireland. The Apothecaries Amended Act passed into law in 1872. Women were admitted to practice in 1876. In 1878 the pharmaceutical chemists were licensed by Act.

This increased desire for knowledge of anatomy and surgery had a remarkable effect at the time. At the early part of the century, with some few exceptions, very few surgeons, even of large hospitals, had personally dissected the human body; and the demand then for subjects became so great that a disreputable association had to be entered into between the teachers of anatomy and a class of men who were termed "Resurrectionists" to supply them with subjects. The sums paid to these body-snatchers was frequently exorbitant, and a scandal arose which at the time created a great sensation, as, in addition to the many indecencies undoubtedly committed, it was alleged that murders were incited. The excitement was happily allayed by the passing of the Anatomy Act of 1832, which, by affording facilities for the practical study of anatomy gave a great impetus to study in this country.

One of the curious features at the early part of this century was the continuance of the system of private medical teaching. Some of these schools attained a great deal of prosperity—Grainger School in the Boro', founded by Edward Grainger, a dresser of Sir Astley Cooper, at the United Boro' Hospitals. Grainger failed to get an appointment when Aston Key was appointed Demonstrator and started a school of his own in Webb Street, near Guy's Hospital. He built a theatre, and by securing the services of the resurrection men assembled a class of 300 students. Edward Grainger died in 1824, but the school continued under his brother, R. D. Grainger, until 1842, when it was closed; St. Thomas's Hospital securing his services as Lecturer on general anatomy and physiology. The Hunterian School of Medicine in Great Windmill Street and the Aldersgate School were other schools of great importance. The latter was closed in 1849.

It was at Grainger's School that the body of the English philosopher, Jeremy Bentham, was dissected and lectured upon, in accordance with his will, by his friend, Dr. Southwood Smith; after the examination his body was embalmed and dressed in his clothes and is still preserved at University College, London. Southwood Smith, previous to the passing of the Anatomy Act, had published an article in the *Westminster Review* on the use of the dead to the living, advocating facilities for dissection. At the ceremony Southwood Smith gave a sketch of Bentham's philosophy and an account of his last moments. During the ceremony a violent thunderstorm shook the building, but Smith proceeded with a clear, unfailing voice, with a face as white as the dead philosopher's before him. Brougham, Grote and Mill were present at the examination of their dead friend.

The growth of the medical press and the influence it had upon the medical profession commenced with the efforts of William Sharman, M. D., who was at Harwich, in 1767. He commenced in 1810 to edit a periodical, which was styled the *New Medical Physical Journal or Annalls of Medicine, Natural History, and Chemistry*. It was in existence in 1815.

In 1815 Thomas Wakley was a student of the Borough Hospitals; the greater part of his medical education was acquired at the Grainger School. In 1817 he became a M.R.C.S., and commenced practice. Fortunately, perhaps, he did not altogether succeed, and his great talents were turned in the direction of journalism. He founded the *Lancet* in 1823, with the primary object of disseminating much-needed information hitherto regarded as the exclusive property of members of the London Hospitals, and also with a view of exposing the family intrigues that influenced the appointments in the London hospitals and the medical corporations.

At the present time the influence of the press is enormous. Our own *Journal*, reflecting the opinions of this Association, shares with the *Lancet* and many other medical periodicals in guiding the profession upon every question to the direct issues constantly occurring.

It is of course quite impossible to give anything more than quite a brief enumeration of the brilliant work of the physicians and surgeons of this century, but there are some incidents that deserve notice—take, for instance, the remarkable advance in practical medicine by the physicians of Guy's Hospital. Richard Bright's discoveries in the pathology of kidney disease, which results were published to the world in 1872; Hodgkin, pathologist of the hospital, who published his observations on some morbid appearance of the lymphatic glands and of the spleen; and Thomas Addison, who from 1849 to 1855 was directing attention to the relationship between anemia and disease of the suprarenal capsules. These diseases are now known all

over the world as Bright's disease, Hodgkin's disease, and Addison's disease. In 1873 another Guy's physician, Sir William Gull, described to the Clinical Society of London a cretinoid state supervening in adult life in women.

In 1837 Gerhard, a young American physician, clearly laid down the difference of the two diseases of typhus and typhoid fever. After much doubt and discussion the question was finally settled in England by Sir W. Jenner in 1849-50.

The credit of recognizing the connection between the acceleration and violent actions of the heart and the enlargement of the thyroid gland, two of the great cardinal symptoms of exophalmic goiter, undoubtedly belongs to the great Dublin physician Graves, who in 1835 pointed out in a published lecture that the disturbances of the heart's action is not necessarily associated with organic disease of the heart. Five years later a German physician, Basedow, published a more complete and elaborate account of the clinical features.

Hughes Bennett first described leucocythemia in 1845. A few weeks afterwards Virchow published a case which had been independently observed by him previous to the publication of Bennett's first communication on the subject, and pointed out that the white corpuscle found in the blood were not pure cells, and termed the disease leukemia. A violent controversy sprang up between those two celebrated men and other supporters. Of this Byrom Bramwell says "that while Bennett was the first to observe and publish a detailed case of the pathological appearances and blood-changes, Virchow was the first to give an intelligent explanation of the peculiar alteration of the blood which is the essential characteristic of the disease."

Among other great contributions to the advance of scientific medicine, one can but enumerate the works of Marshall Hall, Elliotson, Stokes, Alison, Sir Thomas Watson, the Farrs, Sir W. Jenner, Sir J. Simpson, Tyler Smith, the Budds, and Sir James Paget. In connection with the name of Dr. Elliotson, who aroused such a famous controversy in relation to his association with mesmerism, it is interesting to note that he was the first in 1826 to discard the style of dress then prevalent with physicians—namely, knee-breeches and silk stockings. He was also one of the earliest in England to adopt the practice of auscultation.

In surgery, more perhaps than in medicine, the tendency has been to specialize. Some of them inevitable and most desirable, others quite unnecessary. Dentistry is now practised as a special branch of surgery. The earnest work of Sanders, Sir W. Lawrance, and later of Sir W. Bowman, Critchett, and many others, has established ophthalmic practices in this country. In aural surgery, George Pilcher, Toynbee, Yearsley, Harvey, Hinton, and many still living have raised aural surgery from a neglected condition to a recognized position as a legitimate branch of surgery.

In all the domains of surgery there has been no more brilliant advance than in abdominal surgery. Operations that scarcely more than forty years ago were deemed unjustifiable—so great was the mortality at that time—are now performed with success in every hospital. For this our thanks are due to Sir Spencer Wells, Keith, Clay, Greig Smith, and many of those still living, but to none more than he to whom all surgery is indebted for antiseptic precautions in treatment.

It is not, perhaps, so generally known as it deserves to be, that William Jeaffreson, of Framlingham, in the County of Suffolk, an East Anglian surgeon, was the first surgeon in England to perform the modern operation of ovariotomy by a small central incision. The circumstance, as recorded in the Transactions of the Provincial Medical Association of 1837 are as follows: "Mr. Jeaffreson in 1833 lost a patient suffering from an abdominal tumor. She died from tuberculous disease of the lungs; and, obtaining the consent of the friends, he made a post-mortem examination, which satisfied him that the tumor could have been removed, and but for the disease of her lungs her life might have been spared."

In November of the same year Jeaffreson and his friend King attended together a lady in her confinement with a small tumor. They subsequently advised an operation, and in May, 1836, a central incision was made, about 1½ inch, the cyst tapped, withdrawn, the pedicle secured by ligature, and the ends cut off short. The wound was adjusted by two sutures, and napkins wrung out in the coldest water were constantly applied to the wound. Sulphate of magnesia was administered every four hours, and all went well until the tenth day, when he was called to his patient at 3 A. M., to find her pulseless, with incessant vomiting and hiccough, with griping pains in her body. A stimulating enema, with 2 grs. of opium, gave her speedy relief, and she recovered.

His friend and neighbor King at Saxmundham, Suffolk, about ten miles away, operated a few weeks later, with complete success, his incision being somewhat longer—about 3 inches. Two years subsequently a third East Anglian surgeon, Crisp, of Harleston, who lived about twenty miles from Jeaffreson, was also successful, with an incision of 2 inches. These three cases, which were performed by three surgeons in general practice in this country, were the first in England, in response to the doctrines of William and John Hunter, and are the more remarkable when we consider that no operation of the kind was attempted in London until four years later, and no ovariotomy was performed in a London hospital until ten years after Jeaffreson's case.

Of another special branch of practice, the

treatment of mental affections has greatly improved, and the provision of suitable institutions has generally extended. Among many others to whom we are indebted are William Tuke, 1732-1822, and other members of the same family; Sir E. Bucknill, and many other physicians at home and abroad. A provincial physician, Dr. Robert Gardner Hill, who was Mayor of Lincoln in 1851, deserves to be specially remembered. In 1839 he published lectures on the management of asylums and the treatment of the insane. He argued that in a properly-constituted building, with a sufficient number of suitable attendants, restraint is never necessary, never justifiable, and always injurious to all cases of lunacy whatever.

Of the further practical results in surgery the results are so well known that it goes without saying that the advance has been enormous, thanks to our countrymen Sir R. Brodie, Aston Key, Sir W. Lawrance, Robert Liston, Sir James Paget, Syme, and the Edinburgh surgeons Sir W. Ferguson, John Hilton, the Dublin surgeons, Sir George Humphry and many still living, as well as by the brilliant achievements of surgery in all parts of the world.

The two great discoveries of the nineteenth century in connection with both medicine and surgery are the antiseptic treatment (for which we are indebted to the genius of a living surgeon, Lord Lister), and the use of anesthetics. Those now in general use are nitrous oxide gas, discovered by Sir Humphry Davy in 1800; of sulphuric ether, by Faraday; and chloroform, by Liebig. I shall not detain you by a history of the introduction of anesthetics into surgical practice, but as we have still living in East Anglia a most distinguished surgeon (Mr. William Cadge), who was present on the occasion of the first operation in London under the influence of ether, I thought it would be interesting to hear his record of the circumstances. Mr. Cadge says: "Robert Liston was the first surgeon in this country to use ether, and those who were present at University College Hospital on December 21, 1846, and witnessed the complete and perfect success of that first venture, will not easily forget the dramatic character of that scene. I was present and assisted at the operation—amputation of the thigh by the double flap method. Someone present timed the operation; it took 30 seconds; the few arteries were tied, and all signs of blood cleared away. A towel was then thrown over the stump, and we watched anxiously for the patient to show that he was not dead; he presently woke up, and when asked once or twice if he could stand the pain of the operation, he accused us of cruelly trifling with his feelings, and when the towel was removed and he saw the naked stump, he burst into tears, and I thought Liston would do the same."

Many fresh fields of inquiry and separate study have been instituted. In 1831 Alfred Swaine Taylor, the famous chemist and medical jurist, was appointed Lecturer on Medical Jurisprudence at Guy's Hospital. His inaugural course was the first delivered in this country, and was attended by many leading counsel and some judges.

In 1842 Parkes was Assistant Surgeon to the 84th Regiment, when he retired and became physician to University College Hospital. He was the founder and first teacher of military hygiene, and was a great factor in, if not the founder of, the science of modern hygiene.

The elaborate directions in the Mosaic laws for the preservation of health, through scrupulous attention to cleanliness and the isolation of the sick and extreme care in the use of wholesome articles of food and drink, are well known to Biblical students.

The subject has in later years been studied to considerable advantage. In 1801 Heberden wrote: "The cause of so great an alteration in the health of the people of England—for it is not confined to the metropolis—I have no hesitation in attributing to the improvements which have gradually taken place, not only in London but in all the great towns, and in the manner of living throughout the kingdom, particularly in respect to cleanliness and ventilation. Two centuries ago the mortality of London is stated to have been 80 per 1,000; at the present day it is under 20. A century ago ships could barely keep the sea for scurvy, whilst gaols and hospitals were in many cases the hotbeds of fatal disease. Now these conditions are rectified, or at least the means of rectifying them are known."

The special departments which concern the surroundings of man—his personal health, food, drink, clothing, hours of labor, and certain other points, such as the management of infancy, the prevention of disease, the hygiene of the sick chamber, and the disposal of the dead—have been the subjects of legislation during the present century.

State medicine, as an organized department of administration, is entirely of modern growth.

In passing the milestone of life in the year A. D. 1900 I have thought it might be well to take a retrospect of our advance to our present position, and to express the hope that as time goes on our profession may continue to uphold its regard in the estimation and affection of all, and its usefulness may continue unchecked for the advantage of humanity.

THE SURGEON IN THE NINETEENTH CENTURY.[1]

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I am fortunate in the circumstance that the occasion for the giving of this address coincides with the concluding year of the nineteenth cen-

[1] The Address in Surgery delivered at the annual meeting of the British Medical Association, Ipswich, July 31, August 1, 2, 3, 1900; advance abstract through the courtesy of the Editor of the *British Medical Journal*.

tury. This century has been without a parallel in the history of human culture, and so far as the art of surgery is concerned has embodied an advance in principle and in practice which has been no other than revolutionary. I do not propose to attempt a review of the progress of surgery during the last hundred years. That work has been already done by abler hands. I would venture rather to deal with the progress of the surgeon himself during this period, and with the advancement of the individual as an exponent of a grave profession.

There is little difficulty in fashioning a picture of England as it was one hundred years ago. Education among the mass of the people was a matter of little account, and was to a great extent actually non-existing. The average man of the middle class was quite content with a degree of learning which would do little more than satisfy the demands of a modern school board.

As to the surgeon in those days, he was but a sorry element in social life. In the great towns and cities there were esteemed practitioners of surgery who were eminent by reason of their scientific work and their successful practice, but their numbers were few. At the commencement of the period under notice London was the center of surgical activity, and the prominent exponents of the art at that time were John Abernethy, Henry Cline, Sir William Blizard, Sir Everard Home, Sir Astley Cooper, William Lawrence, and Charles Aston Key. The great John Hunter had died in 1793, having accomplished a work which marks an epoch in British surgery. In the provinces the most conspicuous surgeons were Edward Alanson of Liverpool and William Hey of Leeds, while in Edinburgh the position of the leading operator was held for many years by John Bell. A little later in the century we find among the names of prominent men in England those of Sir Charles Bell, Sir Benjamin Brodie, and the ingenious and learned Benjamin Travers.

At the beginning of the century surgery on the Continent was represented by such men as Sabatier, Deschamps, Boyer, and Larrey in France, Scarpa in Italy, Langenbeck, Chelius, and Dietenbach in Germany, and Warren and Physick in America.

The surgeon or common practitioner in the village and town in those early days has been depicted by many writers. There was probably some excuse for a writer who, in a discourse in the *New Monthly Magazine* for 1828, speaks of the general body of surgeons as a "cringing pulse-feeling race."

In noting the advances made by the surgeon during the century, the first matter which may be dealt with concerns his position as an adviser to his patient. There is no science outside our own in which there has been, during the stages of development, such an extreme disproportion between the amount of knowledge professed and the amount proved ultimately to be exact and sound. As an example of this may be cited the "humoral" system of pathology which, in spite of its ancient origin and its more or less obvious foolishness, held a position in medicine for centuries, and struggled on, as a distorted and dying creed, even into modern times. This system, in its barest features, asserted that four cardinal humors occupied the human body, and that practically all diseases, and certainly all tumors, were due to disorders of certain of these fluids. The pathology of this system was precise, dogmatic, elaborately classified, and full of detail. Upon it all treatment was founded, and yet the whole of this precious system was a mere daring fiction, an ingenious fancy, the product of an impudent and unscrupulous imagery. The reason for all this lies more with the sick man than with the man of medicine. The sick man requires absolute and exact knowledge from his doctor. He will accept neither possibilities nor doubts nor confessions of ignorance. He will accept such from his lawyer and from his man of business, but not from the man who attends him in illness.

The surgeon of the present day, as an adviser, is in a position which is so greatly improved that it could hardly have been imagined by his forebears of one hundred years ago. He has in the first place to deal with a more enlightened public, with patients whose education to a large extent enables them to appreciate the nature of scientific problems, and with whom it is possible to discuss difficulties, and to own to lapses of information. In the second place, the additions made to surgical lore have been so substantial that in many departments surgery has reached the status of an exact science. There is indeed no longer need to call upon invention to supply such gaps as still indicate the unknown. An intelligent patient is satisfied with the assurance that practically nothing at present is known of the nature and causes of cancer. Such assurance is at least as valuable as the information provided at the beginning of the century, when the inquirer would have been told that cancer was "a diseased hardness," or a "scirrhous degeneration." The modern surgeon can well afford to dispense with all empty verbiage, since he can base his opinion upon demonstrated facts and can express it in plain words, free from any of the embellishments of a literary masquerade. For many reasons this is well.

In 1800 a man could practise as a doctor without passing an examination of any kind. Indeed, one itinerant practitioner is reported to have assumed the title of assistant surgeon on the ground that he had served an apprenticeship to the crutch-maker of a hospital. The examination for the diploma of the Royal College of Surgeons was by *viva voce* only. There was no examination of patients, and no dissection of the subject. Candidates were required to produce evidences of apprenticeship, of attendance upon

anatomical and chirurgical lectures, of having performed dissections, and of having attended the practice of a recognized hospital for a period of six months.

At the commencement of the century there was, indeed, no systematized medical education. The training of the surgeon was paltry, casual, and inefficient. His preliminary education was miserably meager. It was necessary that he should be able to read and write and pretend to some smattering of Latin. He became an apprentice, and, in that menial capacity, gleaned what he might from his master and from attendance upon sundry lectures. So far as hospital practice was concerned, his attitude as a learner was well expressed by the phrase, "He walked the hospital." The institutions which he thus attended for a period of six months were in a state of rude squalor as regards administration, sanitary arrangements, and nursing, and well deserved the abuse which was lavished upon them.

During the nineteenth century the surgeon, as an operator, passed through a rapid metamorphosis, and has now reached at least the level of the unexpected. It may have been supposed that there is little to be learnt in the way of using a knife which had not been learnt during a period of over eighteen hundred years, for there were surgeons before the Christian era. Yet time has shown that even in 1800 there was a technic in operating which was as little like the technic of to-day as are the slashes of a cutlass when compared with the studied movements of a foil. It may have been surmised that twenty centuries would have exhausted the methods by which a limb could be cut off. Yet in 1800 modes of amputation were in vogue which are now regarded as uncouth. It cannot even be said that the commencement of the century saw in use a ready and efficient means of checking bleeding, although that measure represents the most elementary of the surgeon's duties.

The operator of olden times certainly possessed many qualities which are now falling into abeyance, and which cannot pass away quite unregretted. The success of his craft depended largely upon his daring, upon the alertness of his eye, the steadiness of his nerve, and the rapidity of his movements. He stepped into the arena of the operating theater as a matador strides into the ring. Around him was a gaping audience and before him a conscious victim, quivering, terror-stricken, and palsied with expectation. His knife was thrust through living flesh and acutely-feeling tissues, and the sole kindness of his mission was to be quick. In spite of moans for mercy from gagged lips the knife had to move on its way steadily, and, undeterred by struggles and bursts of hemorrhage, the blade must needs pass without faltering or sign of hesitancy.

There is less need for such qualities now. The dramatic element in surgery has gone with the men who unconsciously fostered it. The operating theater of the present day has lost its horrors, and has changed from a shambles to a chamber of sleep. The surgeon's hand can move with leisurely precision, and theatrical passes of the knife are favored only by those who have not yet learnt that mere brilliancy is no measure of success.

It may be that the present-day surgeon is a loser in that he has less need for those dashing qualities which were essential to the operator before the days of anesthetics; but, on the other hand, he has gained much in the direction of the sympathetic handling of his patient and in the culture of gentleness. Consideration for the patient and for the patient's sensibilities have become a matter of the first moment, and the operator has learnt that his work is best done if done with gentleness and tact, and that haste and bluster, coarseness and coarse handling are out of place around the operating table. A striving after effect at any cost has ceased to be an element in the surgeon's work. Success is no longer to be measured by the number of minutes occupied in the amputation of a limb, but by the state of the patient many days after the measure has been completed. The triumph of the older surgeon was immediate and scarcely reached beyond the arena of the theater. The triumph of the modern surgeon is deferred, and is found in the operation ward and in the convalescent home.

Still, the fact remains that it is easier to be a surgeon of some degree at the end of a century than it was at the commencement, since in the earlier days the qualities needed for success in operating were rare and of a kind not readily to be acquired. On passing more into detail, one notices that beyond these general changes in the attitude of the operator there have been others which owe their existence to special advances in the surgeon's art. Prominent among these may be named: (1) An improved knowledge of anatomy; (2) a readier method of arresting hemorrhage; (3) the employment of anesthetics; and (4) the introduction of antiseptic measures.

At the present day the surgeon has little dread of hemorrhage, and the confidence he possesses is based upon good grounds. In the first place, he makes larger use of the precautionary ligature of vessels. It has become a commoner practice to apply a temporary or permanent ligature to a main artery before a part supplied by that vessel is excised. This is carried out frequently in dealing with large and vascular tumors. In removal of the tongue, moreover, an excellent method is that in which a preliminary ligature of both linguals in the neck is carried out. In removing the uterus through an abdominal incision the question of hemorrhage is disposed of by an early ligature of the ovarian and uterine vessels. A further example of this mode of anticipating bleeding is afforded by that

method of hip amputation which is known as the anterior racket. Here the main vessels and even the main branches are secured before the flaps are cut, whereas by the older plan the vessels were severed with the flaps and were tied after the limb had been removed.

In the second place, the latter-day surgeon is operating upon an anesthetized patient and can proceed with slowness and deliberation. The importance of this fact in connection with the present subject cannot be overstated. In the instances which have been just cited an excision of the tongue in a conscious patient would be greatly extended by the twofold operation in the neck, and whereas the amputation of the hip by transfixion occupied in able hands but a minute or so, the operation by the anterior racket is tedious and involves relatively much expenditure of time.

Thirdly, the treatment of hemorrhage has been to a remarkable extent simplified, if not indeed rendered complete, by the introduction of the pressure forceps of Sir Spencer Wells. These little instruments represent the most valuable addition which has ever been made to the surgeon's appliances. It is not uncommon in operations of a certain type to have twenty or more pairs of pressure forceps applied to the surface of the wound at one time. This represents a degree of possible bleeding which in the old days, when every vessel had to be separately tied, would have been replaced by actual bleeding of a fatal type. No instrument has brought with it so great an assurance of security or has done more to extend the area of safe operation.

The value of the anesthetic and the radical and beneficent transformation it has effected in surgical practice call for no comment in this place. The changes that the discovery has wrought in the personality of the surgeon, in his bearing, in his methods, and in his capabilities are as wondrous as the discovery itself. The operator is undisturbed by the harass of alarms and the misery of giving pain. He can afford to be leisurely without fear of being regarded as timorous. To the older surgeon every tick of the clock upon the wall was a mandate for haste, every groan of the patient a call for hurried action, and he alone did best who had the quickest fingers and the hardest heart. Time now counts for little, and success is no longer to be measured by the beatings of a watch. The mask of the anesthetist has blotted out the anguished face of the patient, and the horror of a vivisection on a fellow-man has passed away. Thus it happens that the surgeon has gained dignity, calmness, confidence, and, not least of all, the gentle hand.

Anesthetics have, moreover, greatly extended the domain of surgery by rendering possible operations which before could have been only dreamt about, and by allowing elaborate measures to be carried out step by step.

The introduction of anesthetics has not only developed surgery, but it has engendered surgeons. It has opened up the craft to the many, for in the pre-anesthetic days the qualities required for success in operating were qualities to be expected only in the few.

Of the great work of Lister, and of the introducing of the antiseptic treatment, there is no call to speak at this time. When the century was yonng the touch of the operator was the touch of a tainted hand; the balm he poured into the wound was poisoned, and he himself undid the good his science strained to effect. It is sad to think that behind the earnest man with the ready knife there stood a shadow which rendered hopeless his kindliest effort, and which only too often proved to be the veritable shadow of death.

The change has been great, and its greatness lies in its littleness, for it is bound up with no more than this: The surgeon has learnt to be clean. The operator of days gone by would have turned with some petulance from the grand simplicity of the counsel to be clean. He ever sought some means of mighty bearing to rid him of the incubus of failure, and, like Naaman of old, he would have hesitated to dip in the Jordan of antisepticism to be free of his leprosy. The surgeon has not only learnt to be clean, but he has become aware of the potency of little things. The demands of the antiseptic treatment have made him minutely careful, distrustful of any aid that he cannot control, and suspicious of any semblance of error.

It is possible that the abandonment of the old easy order of things has been followed by a too slavish devotion to mere ceremonial. The remarkable and extravagant preparations with which some surgeons now approach an operation, the cleansings and the washings which precede the laying on of hands, smack a little of fetish worship, and foster the cult of the surgical Pharisee. On the other hand these performances, this "making clean of the outside of the cup and platter," seem to give assurance, and to render the devotee thankful that he is not as other men.

Circumstances in the tendencies of to-day foreshadow to some extent what may lie buried in the future. The changes which have swept over the world of surgery have extended the possibilities of the art, and have, at the same time, added a host to the ranks of those who practise it. Where there was one surgeon there are now ten, and throughout the breadth of the land and to its utmost limits the work of the operator has extended. The more ambitious performances of surgery are no longer restricted to great centers, but are carried out in the little town in the cottage hospital, and even in the cottage itself. The general practitioner is laying claim to operate upon his own patients, and is carrying out his intention in no hesitating manner. The days of the great operator, of the one

man to whom all came who could, are rapidly passing away. Indeed, the practice of pure surgery, which was at one time limited to the prominent few, is now becoming common to the many. The man who excels conspicuously as an operator will always attain such eminence as his ability deserves, but the exclusiveness of the practice of operative surgery is quietly vanishing with the century. This change is well. It is a change that is inevitable. The democratic movement is the active power of the day, and that an oligarchy in the community of surgeons should be replaced by an earnest democracy is precisely in accord with the spirit of the times.

In every great change there must—at first at least—be some undesirable developments, and it is impossible to deny that the wider distribution of the practice of operative surgery may lead to the occasional performance of major operations by men who are not justified, either by experience or by training, in undertaking them. Furthermore, there is, among the signs of the times, some evidence that the reaction in the matter of operative surgery is to some degree extreme, and that we are in danger of passing from the policy of doing too little to the policy of doing too much. Operations we know were too few in the past, but there is some foundation for the impression that they are occasionally too frequent in the present.

One other matter which looms out of the future will suffice to bring this subject to a close. So many have been the artificial aids to clinical investigation which recent science has introduced that it comes to be a question whether the natural acumen of the surgeon will not deteriorate in proportion as he fails to encourage that particular learning which clings to the finger tips of all great diagnosticians. That there will be such a decadence is beyond doubt. The loss is to be deplored, for if there be one point of excellence which stands before all in the qualifications of the perfect surgeon, it is bound up in that refined sensibility, that critical perception, that inestimable cunning, which lie in the surgeon's touch. Examples of the directions in which this loss will be felt come readily to mind. A considerable amount of skill, for example, is demanded in the examination of complex fractures, of lesions of deep-seated bones, and of injuries about joints. What was to be learnt of these troubles had to be acquired by a tedious manipulation demanding considerable refinement. The surgeon who has now to deal with such conditions can afford to dispense with a prolix examination, and can submit the inquiry to a demonstrator of the Roentgen rays. The skiagraph, although its value is much exaggerated, embodies a substantial gain, but it is to be discounted by the loss of the great element in education which it is slowly replacing.

An obscure tumor—to take another instance—presents itself, and no longer is the surgeon compelled to trust to the acuteness of his inquiry and his patient review of all the physical details of the mass. For what his ready fingers may have learnt can be substituted the findings of the exploratory incision, the trochar, and the aspirator. Here once more an advantage is minimized by a loss.

Or, again, an abdominal swelling is brought under notice. Its features are obscure, but much of the uncertainty of outline can be dissipated by a cultured hand which, with infinite patience and repetition, has learnt to construct a reality out of a shadow. It may be said that it is needless to persist in bringing this much elaborated means of inquiry to further perfection since the problem is at once to be solved by an exploratory laparotomy. By such little operation a great advantage is gained, but an opportunity to add to one of the most refined forms of learning is lost. The value of the exploratory incision is beyond question, but among the signs of the times it is impossible not to notice a tendency to resort too readily to this means of solution. The Gordian knot, according to the legend, was ultimately cut, and it is a question whether the sum of human ingenuity would not have been substantially increased if attempts to untie the noose had been more diligently persisted in.

In another example, let it be supposed that a suspicious ulcer presents itself for diagnosis. In such case it is well to devote time to a precise and tedious inspection of its edges and to a careful tactile examination of its base, and to check what is discovered by results laboriously gained from like inquiries? Is it not simpler to take a scraping of the affected surface and to submit it to a microscopist, and to thus be spared a method of examination which, although it may not give final results, yet represents an opportunity of furthering a priceless accomplishment?

Finally, there are cases which present symptoms hard to interpret at any superficial inquiry. Is it worth while in such to undertake an exhaustive critical research and to submit the whole to a trained judgment? The quest would no doubt develop habits of observation and powers of weighing evidence; but the process is slow, and an inquiry carried out in a bacteriological laboratory will clear up all doubts, and at the same time dispense with the efforts of a cultured sense. Those, therefore, who are concerned with the education of the surgeon of the future would do well to still cherish this ancient power, and to foster a memory of the fact that surgery is, in its very essence, a handicraft, and that in all that he does the surgeon's great endeavor should be to make his own hands self-sufficing.

It is sad to think that this hardly-acquired faculty dies with the possessor of it, and never was this more vividly presented than it has been by the loss surgery has sustained in the death of Sir James Paget. One can picture the great surgeon composed in his last sleep, and can see the once

busy fingers lying lifeless on the white sheet, and then comes the wonder at the wealth of learning, at the exquisite cunning, at the refined sense which lay dead in the dead hand. No written book can hold a tithe of the dainty knowledge which had been mastered by those subtle fingers, and no record, however labored or however loving, can tell of the power which once rested in that magic touch.

An individual loss does not, however, hinder the general tide of progress. Advance in such a work as ours depends upon the uneventual work of the whole body and is only accentuated by the achievements of the prominent few. The movement is the movement of a multitude in which individuality is, at a distance of time, little to be distinguished and in which personal eminence contributes a smaller factor than the present is ready to acknowledge. Those who stand forth as the leaders of the advance are merely the elect of the common body and the representatives of a wide intellectual franchise. Even he who startles the world as a discoverer has often done little more than give expression to what was already nascent in the multitude. So as one great surgeon after another drops out of the ranks his place is rapidly and imperceptibly filled, and the advancing line moves on with still the same solid and unbroken front. The continuity of progress is undisturbed by the uncertainties of human life.

MEDICAL PROGRESS.

Hydrocephalus.—Bourneville and J. Noir *(Le Progrès médical*, July 14, 1900) report the following interesting case. There is no hereditary history; while the mother was pregnant she had smallpox, and this, together with worry over the death of one of her children, resulted in the birth of this child at seven months. It weighed only two pounds, and during its first six months of life the head was normal. Then it was seized with convulsions and its head became much enlarged; the convulsions ceased after eighteen months, but the head continued to increase in size. At eight years of age epilepsy set in, as many as seven seizures a day, resulting in contractures and complete idiocy. About this time the breasts became large, pubic hair appeared, and menstruation became regular. The child masturbated excessively, became rapidly emaciated, and died. The autopsy showed obliteration of the aqueduct of Sylvius and miliary tuberculosis of both lungs.

Peritonitis.—The peritoneum is a joint of vast dimensions, says Byron Robinson *(Med. Rec.*, July 28, 1900), consisting of four elements, *viz.*, endothelial cells, intercndothelial spaces, stomata vera lined by granular polyhedral cells, and stomata spuria, irregular openings between the endothelial cells. Its functions are to prevent friction between moving viscera, to anchor and support the viscera, to limit them so that they may not become entangled, to furnish them with an elastic covering, to absorb and secrete fluid, and to protect from infection by throwing out barriers of exudate. Its cavity opens directly into the lymphatics and its absorptive powers become greatest in the region of the diaphragm. Therefore infection in this region is most likely to become systemic, while in the region of the gall-bladder, the appendix, or the pelvic organs, there is great chance for local peritonitis, without sufficient absorption to produce a general toxemia. Peritonitis saves life by building barriers against infection, while absorption causes death by sepsis. In the diagnosis temperature is of little value, while the pulse is always rapid, and there are tympanites, muscular rigidity, tenderness on pressure, and the facies peritonei. Patients with septic peritonitis bear anesthetics badly, and during operation should receive hot rectal injections or hypodermics of strychnine and whiskey. The rapid fluid-absorption argues against irrigation in laparotomy, as thus the germs become widely and rapidly distributed. The best drain is a rubber tube enclosed in strips of gauze. After the operation, give calomel, one grain, and magnesium sulphate, half a teaspoonful, hourly for five or six hours. This revives intestinal peristalsis, starts the secretions, and affords drainage from the mucosa. The exquisite tenderness found in the locations of tumors or in the pelvis generally indicates local peritonitis, and this may form adhesions which can cause dull aching sensations for years. Excluding perforation, peritonitis occurs from trauma, and at the bowel flexures, the sphincters of the intestine, and the fimbriated ends of the oviducts. The latter opening directly into the peritoneum account for so much pelvic peritonitis in women. The symptoms of pelvic lymphangitis are pain, rapid, small, wiry pulse, nausea, vomiting, tympanites and a temperature of 101° to 105° F. In the chronic form there are tenderness, palpable exudates, pain, disturbances in the vesical, rectal, and menstrual functions, irregular tympanites, indigestion, anemia, and, finally, neurosis. The usual situation of the mass of exudate is in Douglas' pouch. The treatment is by douche, tampon, massage, extra-uterine electricity, general measures, and rest in bed during menstruation. In the acute cases rest in bed, hot cornmeal poultices, opiates, liquid diet, with calomel and magnesium sulphate for the bowels. As the condition subsides douche twice a day and use the boroglyceride tampon twice weekly.

Amenorrhea.—Among the causes of amenorrhea, writes L. H. Dunning *(Med. Rec.*, July 28, 1900), the most frequent are the constitutional diseases: Bright's, tuberculosis, chlorosis, anemia from unhygienic surroundings, and acute infectious diseases, such as pneumonia and scarlet fever. The local causes are imperforate

hymen, atresia of vagina or cervix, imperfect development of uterus or ovaries, inflammations, ovarian cysts, and fibroids. A temporary amenorrhea may occur in school-girls who overwork or neglect proper exercise, and in women undergoing prolonged mental strain. Amenorrhea following serious and debilitating disease need cause no alarm. The treatment in anemic girls consists of out-of-door sport, good blood-making food, iron, arsenic and sometimes the intrauterine faradic current, or mild emmenagogues, such as one- or two-grain doses of potassium permanganate. In constipation aloes is the best cathartic, and may be aided by tepid baths, friction and free water drinking. Where exercise causes too much cardiac or respiratory disturbance, massage, Swedish movements, and surface electricity may be used. For imperforate hymen incise, empty vagina, and pack lightly with gauze; for stenosed cervix dilate and introduce a Wylie drainage-tube pessary. If amenorrhea is due to retarded development, treat the general system, give tonics, iron and aloes pills, and introduce the zinc and copper stem-pessary of Simpson into the dilated uterine canal. Sometimes in a woman otherwise healthy, a happy marriage results in the speedy growth of the sexual system, and even pregnancy.

The Pituitary Gland in Therapy.—The greater part of the overgrowth in giants, writes Woods Hutchinson (*N. Y. Med. Jour.*, July 21 and 28, 1900), is found at or near the tips of the segment-crescents, as in acromegaly, differing from the latter mainly in that it is not exclusively confined to the tip of the segment or last division of the limb. The facial part of the skull is enlarged out of all proportion to the cranial, particularly in the region of the lower jaw. Giants tend to live but a short time, rarely much over twenty years. Their mental and physical vigor and their sexual powers are below normal, males predominate, and death usually results from a steady, progressive increase of weakness, from some trifling accident, or from usually mild intercurrent disease. These are just the conditions found in acromegaly, and in both this and giantism there is enlargement of the pituitary gland in a large proportion of cases. Summing up his work on the pituitary gland, the author concludes that it is a functional organ, disturbances of the metabolism of which are the principal factors in both acromegaly and giantism, the difference between the results being due to the stage of individual development at which the disturbance of function begins. The nature of the overgrowth is primarily a functional hypertrophy, but later loses some of the definiteness of its impulse, and either produces immature tissue of a mixed type, or results in simple hemorrhagic exudation, with cyst-formation or complete breaking down of the tissue mass. It seems probable that some part is played by this body in dwarfism, rickets, and the dwarf forms of cretinism, and that a reflex disturbance of its function may possibly underlie the dystrophy accompanying pharyngeal adenoids. The pituitary gland would seem to be a sort of growth center, or proportion-regulator of the entire appendicular skeleton. Both pituitary and thyroid extracts have been used; in two cases the former aggravated the symptoms and in several the thyroid extract seemed to remove the mental dulness, loss of appetite, and abnormal conditions of the skin, *i. e.*, the myxedemic symptoms.

Results of Gelatin Injections.—Max Freudweiler (*Centralbl. f. innere Medicin*, July 7, 1900) cites two cases of hemorrhagic nephritis, one chronic, the other acute, in which gelatin solution was injected into the upper part of the thigh. The first case had lost much blood from epistaxis and profuse menstruation, had 87 per cent. hemoglobin, with pulmonic and aortic systolic murmurs, and sharp second pulmonic sound. Two hundred ccm. of solution (gelatin 1.0, glycerin 2.0, aq. dest. 100) were injected three times at two-day intervals. A few hours after each there was infiltration and severe pain about the site of the injection, which, however, disappeared in about twelve hours. No diminution of the bleeding resulted, and the filtered urine had a brownish-red color, due to methemoglobin. The albumin in the urine was doubled and the serum of the blood was of a light-red color. The second case exhibited postpartum nephritis with 51 per cent. hemoglobin. Only one injection was made and this consisted of six grams of gelatin dissolved in 300 cc. normal salt solution. The urine became scant, the albumin increased, and the hemoglobin of the blood went down to 45 per cent. The author thinks that the products of the gelatin probably irritated the kidneys.

Abortus Artificialis.—It is conceded on all sides that artificial abortion under certain limited conditions is a necessity demanded by science. Oehlschläger (*Centralbl. f. Gynecologie*, July 7, 1900) gives the indications and most improved method for its performance. The indications are: (1) Endocarditis with edematous swellings; (2) well-advanced tuberculosis; (3) nephritis; (4) uterine disease; (5) deformed pelvis which would necessitate Cæsarean section; (6) uncontrollable vomiting. After the necessity for artificial abortion has been established, the operation should be resorted to at the earliest possible moment as a measure of greater safety. A rule of conduct always to be insisted upon is for the attending physician to call in consultation some colleague as to the necessity for the operation. As for the technic of abortus artificialis, Oehlschläger gives the method in use by him and declares that he has never failed in it nor has ever witnessed untoward results succeeding it. A metallic curved catheter with a lumen of about 2 mm. is introduced into the uterus as far as the fundus. This is absolutely imperative for it

brings the instrument in the immediate neighborhood of the embryo. About a dram of tincture of iodine is injected through the catheter which instrument is then removed. The vagina is tamponed to prevent the iodine which may partly trickle down from irritating the vaginal mucosa. About three days thereafter a little flood is passed and the abortion results in the nature of an ordinary menstruation. This may not occur if the catheter has not reached the fundus. In that case the operation is again performed. The entire procedure is so little exciting to the patient that she may go about immediately and need not necessarily go to bed. This is the case when the menses have ceased only for some days or at most a few weeks. The advantages of the iodine are that it percolates through the tissues rapidly, killing the fetus, at the same time preventing sepsis by its strongly antiseptic nature. Besides, the tincture of iodine stimulates the uterus to contract, causing the expulsion of the tumor.

Aspirin in Rheumatism.—P. Zimmermann *(Berliner klin. Woch.,* July 2, 1900) gives his experience with aspirin in 30 successive cases of rheumatic nature. Included in these cases were several of neuralgia, one of exudative pleuritis, and several of nephritis. The dose varied from 40 grains to 60 grains daily, given in powder *per os.* All other remedies were withheld during this probation. The drug was easily borne by the patient and no disagreeable collateral effects were produced. After its administration, the drug usually produced profuse perspiration with simultaneous decrease of pain and temperature. Although the perspiration was much more intense than that produced by sodium salicylate it seemed to be less lasting, disappearing frequently after the third or fourth day. Of 7 patients suffering from acute inflammatory rheumatism with high temperature, swollen joints and intense pain, 6 were entirely free from pain and fever after the fifth day and became well without complication or remission. The seventh developed a pericarditis. In several cases complicated with valvular endocarditis and compensatory disturbances, very good results were obtained with aspirin. In one of these cases the drug at first seemed to influence unfavorably the breathing and heart-action, causing dyspnea; but after withdrawing the aspirin for some time the same attacks took place, showing the innocence of that drug in their production. In other patients, who had previously taken the salicylates with poor effect or else with whom the salicylates had disagreed, suffering with disturbed compensation, edema, irregular heart, valvular lesions besides the inflamed joints, aspirin was administered with good effect without any suspicion of deleterious action upon the heart. It is natural to expect that the old chronic cases would hardly succumb to the new drug and yet in occasional cases it was successful in mitigating the pain and in easing the patient. In the cases of pleurisy with effusion in which aspirin was tried it worked favorably and promptly to diminish the fluid in the chest. In the cases of migraine and neuralgia a slight improvement only could be recorded. Aspirin has come to supplant the older salicylates by its many advantages over them.

Treatment of Neurasthenia.—O. Dornblüth *(Therap. Monatshft.,* July 1900) discountenances the too free use of drugs in nervous exhaustion, but believes that certain remedies are not without their good effect. Foremost among these ranks codeine which in small doses seems to have a specific effect upon the brain not to be explained by its narcotic properties. Organic iron preparations, arsenic and the bromides are often indicated and used with success. In all cases the physician must search for and remove, if possible, the cause of the disease and insist upon a hygienic mode of life. Hydrotherapy, electricity and massage will often be resorted to with benefit. Often the insomnia is the most prominent symptom and the one for which the patient most urgently desires relief. In such cases the patient, after a light meal, should make it a point to devote the entire evening to complete bodily and mental relaxation, resorting to such occupations as arouse his interest without taxing his strength. A small amount of food before retiring, which should be one hour before the accustomed time, is often desirable, while a warm bath in the morning before breakfast is to be recommended. Among the many methods recommended as sleep-inducing, the author likes especially the warm foot-bath (104° F. for five minutes), the entire bath at 68°-77° F. followed by gentle rubbing, the Priessnitz pack at 59° F., the application of cold to the forehead and galvanization of the head. A Seidlitz powder, infusion of valerian,, lactophenin or kryophin often acts promptly, and the latter antipyretics may be preceded for several nights by the administration of sulfonal, trional or dormiol when insomnia seems intractable.

Treatment of Chronic Otitis Media.—W. Grosskopff *(Therap. Monatshft.,* July, 1900) lays down the following principles in the treatment of chronic suppuration of the middle ear: (1) The use of boric acid according to Bezold's method is often, especially in children, followed by a cure. The method is simple and without disadvantages, but it is often desirable to change remedies. (2) Alcohol is to be recommended in case of excessive granulations. (3) Dry perforations demand trichloracetic acid which may, however, induce severe pain and even suppuration. (4) Pathological changes in the nasal fossæ must not be overlooked. (5) Bromide of ethyl is especially adapted as a safe and quick anesthetic in ear cases.

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SPORADIC AND EPIDEMIC DYSENTERY.

Recent war experiences throughout the entire world have shown that the mobilization of large numbers of troops in warm weather almost inevitably gives rise to epidemic dysentery. In the past it was easy to dismiss any question of obscurity in the etiology of these outbreaks on the theory that insanitary conditions "bred disease." Now we know that disease does not originate *de novo* at each fresh epidemic, but has somehow been preserved, perhaps in some insidious modified form, from preceding epidemics. To discover the methods of this preservation of disease from epidemic to epidemic is one of the most interesting problems in modern medicine. Its solution for any particular affection means, as regards prophylaxis, an immense gain in our armamentarium against disease.

The question of the conservation of dysentery by the occurrence of sporadic cases does not seem very difficult. Series of cases of the disease occur in many different parts of the country every year. It probably would not be difficult to trace the chain of connection between these various groups of cases. In some of the jails, asylums and workhouses of the country there occurs an epidemic of acute dysentery of an especially virulent type. Such good authorities as Flexner and Osler seem to incline to the belief that these cases of acute dysentery are due to the same microbic cause as the acute dysenteric affections that have been studied so carefully of late among our troops in the Philippines and the West Indies. If this be true, then the explanation of the serious outbreaks of dysentery in military and other camps is not far to seek. Acute dysentery, even that known as tropical dysentery, is therefore endemic among us, although it occurs in mild form except under especially favorable conditions.

Dr. Flexner has shown that the acute dysentery at Manila is probably due to a specific bacillus isolated by him. Musser has shown that this same bacillus is the cause of dysentery in Porto Rico; at least the blood of a patient suffering from Porto-Rican dysentery will agglutinate the bacilli in a drop of pure culture of Flexner's bacillus, and this is generally considered to be a crucial and conclusive diagnostic test. If by the same method it could be demonstrated that most of the cases of acute dysentery that occur throughout the country were due to this bacillus, a distinct advance in pathogenesis would be chronicled. The agglutinative method of investigating disease has become so familiar of late years because of the universal adoption of the Widal test for typhoid fever that this investigation would not be difficult. Boards of health throughout the country are in a most favorable position for the taking up of the serum diagnosis of dysentery. Let us hope that the opportunity thus afforded to add to the good work already being done by boards of health will not be neglected, and that even this present summer will see the collection of a set of definite statistics in the matter. If this point can be established it will place the nosology of endemic dysentery on a reasonably rational plane.

THE CAUSE OF GENERAL PARESIS.

Evidence is slowly but surely accumulating each year proving that general paralysis of the insane is essentially a syphilitic disease. This is the commonly-accepted belief among alienists, although as yet without absolute demonstration. A few conservative investigators still hold that the case for etiology of general paresis is summed up in "syphilis and alcohol plus an unknown excitant," while the vast majority of alienists hold to the old Scandinavian idea, "No syphilis no paresis."

Mott of London, in a recent careful survey of juvenile general paresis, found practically all of the hundred or more cases to be dependent upon a syphilitic parentage. Hansen and Heiberg, in a very recent study of syphilis and general paresis in the psychiatric clinic of Kraeplin (*Revue Neurologique*, June 15, 1900), collected and compiled all statistics at hand in regard to the age at which syphilis and general paralysis are required. These data comprise 1000 syphilitic and 2200 general paretics. They found that the general-paralysis curve constructed from the data at hand showed the ages of thirty-five to forty years to be the most frequent period of the beginning of the disease, and the syphilitic curve was found to place the greatest number of patients in the age-period of twenty-two to thirty-two years; this makes practically twelve to thirteen years between the maximum of the two curves, which is the usually accepted period found to exist between the contraction of syphilis and the onset of general paralysis. If we can know to a certainty that these statistical ages can be vouched for in future much may be done in the prevention of general paresis, a disease at present regarded as hopelessly incurable when once established.

ECHOES AND NEWS.

NEW YORK.

Bequest to Metropolitan Hospital.—Dr. Henri Guilbeault has bequeathed the sum of two thousand dollars to the Metropolitan Dispensary and Hospital for Women and Children.

New York Doctor Wins Prize.—Dr. S. A. Knopf of New York has been awarded at Berlin, July 31st, the prize of 4,000 marks ($1,000) offered by the Tuberculosis Congress for the best essay on the subject "How to Fight Tuberculosis as a Disease of the Masses."

Physician Fined for Fast Driving.—Dr. Wallace C. Clark of West Thirty-fourth Street, who was arrested while answering an emergency call in his automobile, Wednesday night, by a bicycle policeman, was fined $3 by Magistrate Mayo in the West Side Court. The Magistrate said that the law did not allow him to discriminate in favor of physicians.

The New York Medical Journal.—Owing to the financial trouble of Messrs. D. Appleton & Co., the New York Medical Journal has been sold to Mr. A. R. Elliott, owner and publisher of the American Druggist. Dr. Frank P. Foster will continue as editor.

Contagious Diseases.—For the week ending July 28, 1900: Measles, 121 cases and 8 deaths; diphtheria, 158 cases and 23 deaths; laryngeal diphtheria (croup), 5 cases and 4 deaths; scarlet fever, 60 cases and 3 deaths; chicken-pox, 5 cases; tuberculosis, 225 cases and 144 deaths; typhoid fever, 25 cases and 13 deaths; cerebrospinal meningitis, 7 deaths; totals, 599 cases and 202 deaths.

Water Cut Off from Schools.—The scarcity of water in Brooklyn has caused the Deputy Commissioner of Water-Supply to issue an order cutting off the supply from all the vacation schools and playgrounds having automatic tank equipment. This order has been put into effect and as a result thirteen of the Brooklyn schools have been closed. Edward G. Ward, Borough Superintendent of Schools, will appeal to the Health Department of Brooklyn for relief. Such a step as this is little short of disgraceful. Proper attention to the unnecessary and extravagant "leakage" would doubtless render this action entirely unnecessary.

New Montefiore Home.—The country sanatorium of the Montefiore Home at Bedford Station on the Harlem Railroad, about thirty-nine miles from New York, is rapidly nearing completion. There is a central building about 60 feet square and two stories high, which will contain the offices and the living rooms of the staff and a large dining-hall for the patients. On either side of this building are two wings, 155 feet long and 35 feet wide. Two of these are for men and one each for women and children. An inclosed corridor at the rear connects all these buildings, and back of this corridor there are the kitchen, laundry, and boiler-house. The whole place will be lighted by electricity; the water for the place will be taken from artesian wells from which the supply is pumped to a reservoir on a hill near the buildings. Broad verandas and sun-parlors are parts of each wing, and in each wing there are also several small rooms for the accommodation of one or two patients, besides the large well-ventilated wards with from twenty to twenty-five beds each.

City Assumes Hospital Debt.—The Board of Estimate and Apportionment held a meeting in the Mayor's office July 26th, for the purpose of closing the arrangement between the city and the Brooklyn Homeopathic Hospital. Under an act passed by the last Legislature and approved by the Mayor, the city undertook to purchase the hospital and run it as a public institution. When the details came up for settlement there were $70,000 in debts on the hospital, which the city has assumed. The understanding is that the institution shall be continued as a homeopathic hospital.

The Blind of New York State.—Considerable interesting information is contained in the report of the Committee on the Blind of the State Board of Charities relative to its annual visitation to the State's several institutions for the care of the blind. It found but 127 inmates in the New York Institution for the Blind in New York City. This is under private management, but its expenses are chiefly met by appro-

priation from the Legislature in the form of scholarship fees for the maintenance and education of the pupils. The number of inmates in the institution was smaller than for several years, and about 100 fewer than a year ago. The State School for the Blind at Batavia is the only institution for the blind supported and maintained wholly by the State. The capacity of the school is for 120 inmates. The institution is crowded to its uttermost, and there are a number of applications for admission on file, which should receive favorable consideration. The children appear healthy and orderly. Intellectual and mechanical instruction is given to the pupils. They take the regular Regents' examination with gratifying results, which speaks well for their capacity and the thoroughness of instruction. Forty are instructed in typewriting. This is of much value to the pupils, they become independent of assistance in their correspondence, and are furnished the means to express their thoughts on paper. Piano-tuning is the chief industry taught. The expert piano-tuner, be he blind or possessed of sight, meets no opposition from the labor-saving machine. Most of the graduates of the school who are proficient in this work can make a comfortable living. Chair-caning, broom-making, plain sewing, embroidery, and other industries are taught.

The Elmira Reformatory.—Superintendent Brockway has resigned and Dr. Frank W. Robertson has been appointed as his successor. Regarding the duties of the new incumbent the *New York Times* pertinently says: "Dr. Robertson, the new Superintendent, has the confidence and good opinion of many of the leading physicians of New York City. He has had experience in Bellevue. He will be unwise if he enters upon his duties under any bias derived from the attacks made a few years ago upon Superintendent Brockway and recently renewed. The Elmira Reformatory is not a place where tearful penitents go about all day with faces uplifted in prayer, abjuring sin and proclaiming with the deep fervor of sincerity their high resolve to lead better lives. Within the walls of that institution are shut up some of the most depraved young savages on the face of the earth. Far more unmanageable than the experienced criminals of the prisons, full to the skin of 'gutter devil,' and with spirits quite unbroken, they are open to no appeal on the side of better nature, and yield to no influences save those of pain and fear. Mr. Brockway knew this very well. He was ferociously abused because he employed the only methods that he knew or that anybody knew to be effective, and he knew more than anybody else about those matters. Until a young reformatory patient becomes manageable and submissive his sojourn in the reformatory can do him no good. He will never be 'cured' of his criminal impulses, never be fit to go at large. That was the object of Mr. Brockway's policy. It will be the object of the new Superintendent's policy if he is to escape failure."

PHILADELPHIA.

Death from Broken Neck.—Louis Vogel, of whom mention was made last week, died at the Samaritan Hospital July 25th, three weeks after the fourth cervical vertebra was fractured. He had regained some power in the left side during the few days preceding his death.

State Board Examination.—The report of the Board of Medical Examiners shows that at the examination held June 26-29th, 330 graduates of the regular school were candidates for license. Of this number one retired because of sickness, one was expelled for attempted cheating, and 41 were considered unworthy of a license. This is a low percentage of failures.

Hospital Bequests.—St. Timothy's Hospital, Roxborough, is rapidly increasing in efficiency because of several substantial bequests lately received. Among these are $10,000 from J. V. Merrick, Sr., one of $5,000 from John H. Dearnley to endow a bed in memory of his daughter, and one of $50,000, toward the expense of the new annex now building, from Percival Roberts, Sr.

College of Physicians.—The will of the late Dr. John Ashhurst, Jr., provides for a handsome addition to the library of this institution. The College is to have its selection from his books of a number not exceeding 1500 volumes.

Physician Arraigned for Neglect of Duty.—Dr. O'Reilly was arraigned before one of the city magistrates charged with failure to report a case of diphtheria. His accuser stated that the physician was attending a case next door to him, that he did not report it, and that his child contracted the disease and subsequently died. Dr. O'Reilly testified that the case he was attending was one of follicular tonsillitis. The Court refused to hold the physician responsible for the death of the complainant's child and dismissed the case.

Pennsylvania Hospital.—Dr. Robert Le Conte has been elected surgeon to succeed the late Dr. John Ashhurst, Jr., whose place he filled as acting surgeon during the latter's illness. Dr. Le Conte is also surgeon to the Children's Hospital, the Bryn Mawr Hospital, and assistant surgeon to the Orthopedic Hospital.

Health Report.—Deaths in the city for the week ending July 28th were 514, a decrease of 50 from those of last week and an increase of 33 over the corresponding week of last year. The heat was responsible for 140 deaths, among these being 26 from sunstroke. From cholera infantum there were 75 deaths. There was one fatal case of cerebrospinal meningitis. Contagious diseases: Diphtheria, 40 cases, 8 deaths; scarlet fever, 17 cases, 1 death; typhoid fever, 49 cases, 12 deaths.

Increase of Insanity.—The annual report of Dr. John B. Chapin, Chief Physician to the Pennsylvania Hospital for the Insane, gives some interesting facts regarding the class of people furnishing the greatest increase in the number of cases. The report includes the Philadelphia Hospital, which receives only the indigent insane of this city, and also the admissions from the city to the Norristown, Pennsylvania, and Friends' Asylums. The increase of insanity in Philadelphia since 1890 is shown to be principally among the poor, the percentage of the entire number of cases from the city rising from 41 per cent. to 60 per cent. in the Philadelphia Hospital. The Norristown Asylum shows a decrease from 42 per cent. to 24 per cent., while the Pennsylvania and Friends' Asylum maintain about the same average. The number of new cases in proportion to the entire population of the city has increased from 1 in 1525 in 1890 to 1 in 1317 in 1899.

CHICAGO.

Illinois River Not Polluted by Drainage Canal.—The State Board of Health has issued the advance reports of the sanitary investigation of the Illinois River and tributaries made before and after the opening of the Chicago Drainage Canal. Much has been said about the injury that would result to the waters of these streams by the turning of Chicago sewage into them, and for this reason the Board ordered the investigation made. Dr. Egan, Secretary of the Board, to whom were intrusted the investigations, secured the services of Professor John H. Long of Northwestern University to make the analysis. The advance report does not mark the close of the investigations, for they will be continued and collections of waters made weekly until the close of September. The final report will be made about December 1st. The last time the State Board of Health made a report upon the water-supply was in 1899. Professor Long made collections of water at twenty different points on the rivers that might possibly be affected by the drainage canal. Comparisons were made between these samples and those of the headwaters of several streams. The principal point divulged by the investigations is the fact that the waters of the lower Illinois River at least are not polluted by the flow from the drainage canal. The amount of organic matter disappears rapidly after leaving Bridgeport. Professor Long says that Peoria cattle-shed filth and not Chicago sewage is the main factor in the pollution of the lower river.

Report on Public Charities.—The report of the State Board of Public Charities for the quarter ending June 30th has just been published. It shows that the total number of inmates of the State institutions at the close of the quarter was 9251. The gross *per capita* cost of maintenance was $39.44 and the net *per capita* for the State was $34.81.

Mortality Statistics.—According to the bulletin of the Health Department of this city, the mortality for the week ending July 21st is very gratifying when we consider the various changes in temperature, humidity, etc., during that period. The death-rate per thousand was 12.78, which is a marked improvement on that for the corresponding week of 1899 which was 17.27. The total deaths from all causes were 454; 263 males and 191 females; 136 were under 1 year of age; 53 between 1 and 5 years, and 64 over 60 years. The chief causes of death were: Acute intestinal diseases, 100; Bright's disease, 17; bronchitis, 11; consumption, 45; cancer, 21; diphtheria, 11; heart-disease, 29; nervous diseases, 52; pneumonia, 15; suicide, 4; violence aside from suicide, 26; and sunstroke, 15. During the 20 years from 1880 to 1899, the death rate of the city has progressively decreased, as follows: 1880-1884, 12,319 deaths, 21.9 per thousand; 1885-1889, 14,860 deaths, 19.2 per thousand; 1890-1894, 25,363 deaths, 17.9 per thousand; 1895-1899, 33,515 deaths, 14.2 per thousand. The decrease has been marked as regards infant-mortality. In 1880-1884 the deaths under 5 years of age were 52.2 per cent. of the total; in 1885-1889 this percentage was reduced to 48.7; in 1890-1894 to 45.5 and in 1895-1899 to 38.8. Thirty-four cases of diphtheria were reported during the week, 34 of scarlet fever, and two of measles. There were 466 samples of milk and cream analyzed in the laboratory, 6 per cent. of which were found below grade. No new cases of smallpox have been discovered. Twelve individuals who had been exposed to contagion from the case last reported and who had not been previously vaccinated were vaccinated, and in each case typical primary results followed.

Resignation of Professor Klebs.—Dr. Edwin Klebs, who was Professor of Pathology in Rush Medical College and Director of the Laboratory in the Post-Graduate Medical School, has resigned. It is said that after a few months spent in Switzerland he will go to Germany and locate there.

Crusade Against Rag and Junk-Shops.—The chief sanitary officer of this city has placed most of his force on this work and will compel every owner of this class of shops to comply with the health regulations. Many of the rag dealers, it is said, are so anxious for business that they buy rags which they know to be unsafe.

GENERAL.

Americans Receive Honorary Degrees.—The festival celebrating the centenary meeting of the Royal College of Surgeons, which began on Wednesday, July 24th, was the occasion for the presentation of diplomas of honorary fellowship to a large number of distinguished personages from all parts of the world, including Lord Salisbury and Lord Rosebery. The Americans who were honored in this way are Dr. W. S. Halsted of Baltimore, Dr. W. W. Keen of Phila-

delphia, Dr. Robert F. Weir of New York, Dr. J. C. Warren of Harvard, Mr. I. H. Cameron of Toronto, Sir W. H. Hingston of Montreal, and Sir T. G. Roddick of Montreal.

Obituary.—Dr. George W. Lewis, a well-known physician of Buffalo, and a nephew of the late Dr. Dio Lewis of New York City, died from an attack of apoplexy July 24th.—Dr. Dennis L. Shea died July 24th after a short illness from meningitis at his home in New York City. He was born in New York in 1865 and took his degree as doctor of medicine at the New York University Medical School. After some time spent as a physician at St. Vincent's Hospital he began practising on the west side.

Mother of Eighteen Children.—Mrs. H. Goulet of Broad Street, Marlborough, Mass., July 24th, gave birth to a daughter, who, according to the family schedule, was No. 18.

The American Association of Obstetricians and Gynecologists.—This society will hold its thirteenth annual meeting in the Assembly room of the Galt House, Louisville, Ky., Tuesday, Wednesday and Thursday, September 18, 19 and 20, 1900, under the presidency of Dr. Rufus Bartlett Hall of Cincinnati, O.

The Roentgen Society.—The Roentgen Society of the United States will meet in New York City, December 13 and 14, 1900, at the Academy of Medicine. Papers have been promised by eminent men abroad and here, and a very successful scientific meeting is assured.

Weight of an Elephant's Skin.—Students in dermatology will be interested in the skin of the monster elephant Charlie, once the great attraction of the Crystal Palace, London. The skin weighs no less than a ton, or exactly one-fourth of the total weight of the animal during lifetime. Charlie's height was ten feet three inches.

More Medical Officers Needed.—Surgeon-General Sternberg says that 100 additional medical officers are wanted for duty in the Philippines and China. Only graduates of reputable medical colleges, with some experience, and under forty years of age, will be accepted.

Smallpox.—The situation at Nome is officially reported as greatly improved and the epidemic under control. At Dawson four cases are reported, the infection having been recently introduced via the Yukon. At Lowell, Mass., a recrudescence has occurred and on July 27th thirteen cases were reported at the Quarantine Hospital. Reports from the South and West indicate a persistence of the disease at many centers.

Yellow Fever.—There has been a steady and fairly rapid increase in the number of yellow-fever cases reported at Havana, and the disease seems to be cropping up almost anywhere in the parts of the town where it usually prevails. There were reported in all 21 cases during the week ending July 15th. Thirty-one cases and 12 deaths occurred during the first half of July, which, when one considers that the whole month of June yielded only 17 cases and 6 deaths, show a sharp increase. The normal death-rate among civilians for the month of July is 23. Fears that yellow fever would interfere with the transfer of the First Infantry have been removed. The surgeons report that all signs of it have disappeared and that the embarkation is proceeding with all possible despatch. In the Province of Santa Clara 6 cases have been reported and 2 cases in the military camp.

Trouble in the British Medical Association—There has been a growing feeling among the members of the British Medical Association that its Constitution and By-laws have outlived their usefulness. Accordingly a new document was drafted under the auspices of the Council and an extraordinary general preliminary meeting was called and held a week in advance of the regular annual meeting for the purpose of considering the proposed new Constitution and properly launching it at the regular meeting this week. To the apparent amazement of the Council the resolution to adopt was promptly voted down. The *British Medical Journal*, in commenting on the situation, recognizes the fact that there is always an instinctive impulse in a certain class, the constitutional "Kickers," to go "again the Government," and looks forward to more favorable action this week. It says: "With the administrative experience of the older members of the Association on the box, helped perhaps by some of that common sense on which the Association was asked to rely, we may hope that neither the fiery enthusiasm of the 'leaders' will be allowed to take the coach into a position of danger, nor the caution of the 'wheelers' prevent that progress which is necessary to satisfy the aspirations of the general body of members. It may be consoling to the Council to know that there are others who have similar troubles.

Statistics of Railroad Accidents.—The record of railway casualties for the year ending June 30, 1899, shows that in the United States 51,743 mishaps occurred, 7123 resulting fatally. Of railway employees, 2210 were killed and 34,923 were injured. With respect to the three general classes of employees, casualties were divided as follows: Trainmen, 1155 killed, 16,663 injured; switchmen, flagmen, and watchmen, 273 killed, 2092 injured; other employees, 782 killed, 15,268 injured. The casualities resulting to employees from coupling and uncoupling cars were persons killed, 260; injured, 6765. The corresponding figures for the preceding year were: Killed, 279; injured, 6988. The number of passengers killed during the year was 239, and the number injured was 3442. Corresponding figures for the previous

year were 221 killed and 2945 injured. In consequence of collisions and derailments, 82 passengers were killed, and 1557 passengers were injured. The total number of persons, other than employees and passengers, killed was 4674, injured 6255. These figures include casualties to persons classed as trespassers, of whom 4040 were killed and 4730 were injured. The total number of persons killed at highway crossings was 693, injured 1125, distributed as follows: Employees, 19 killed, 38 injured; passengers, 2 killed, 17 injured; other persons trespassing, 170 killed, 168 injured; not trespassing, 502 killed, 902 injured. The number of persons killed at stations was 443, injured 3306. This statement covers: Employees, killed 83, injured 2139; passengers, killed 37, injured 580; other persons trespassing, killed 282, injured 444; not trespassing, killed 41, injured 143. The summaries containing the ratio of casualties show that 1 out of every 420 employees was killed, and 1 out of every 27 employees was injured. One passenger was killed for every 2,180,023 carried, and 1 injured for every 151,998 carried. Ratios based upon the number of miles travelled, however, show that 61,051,580 passenger-miles were accomplished for each passenger killed, and 4,239,200 passenger-miles accomplished for each passenger injured.

School-Children's Eyes.—Dr. Walter Pyle of Jersey City Heights has at the request of the School Board examined the eyes of 351 children attending school No. 1 on York Street, Jersey City. Of these only 69 had perfect eyesight. Seventy-one of the children not only had imperfect vision, but their eyes were in danger of becoming permanently affected.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, July 21, 1900.

THE ARMY HOSPITAL SCANDALS—DR. CONAN DOYLE'S EXPLANATION—SMALLPOX IN LONDON—SPREAD OF THE DISEASE THROUGH FAILURE OF THE DOCTORS TO DIAGNOSE IT—SUCCESS OF THE LONDON SCHOOL OF TROPICAL MEDICINE—THE POLYCLINIC—PROGNOSIS OF MITRAL STENOSIS—"AUSTIN FLINT'S MURMUR"—CENTENARY OF THE ROYAL COLLEGE OF SURGEONS.

The Army Hospital scandals in South Africa still continue to be hotly discussed in the press, and general dissatisfaction is expressed at the attitude of the Government and the composition of the commission of inquiry. It is generally agreed that the medical profession must not be allowed a preponderating voice on the commission. A letter from Dr. Conan Doyle, the well-known novelist, who many years ago abandoned medicine for literature, but who on the outbreak of the war volunteered his services as a hospital surgeon, is important in this connection. [Dr. Conan Doyle's letter appeared in the Medical News, July 21.—Ed.]

Since the beginning of the year from 60 to 70 cases of smallpox have occurred in London. Apart from 6 cases which apparently were unconnected with each other or with any other case, there have been 5 series of cases in which each case after the first was traceable to the latter. In a considerable number of cases the disease was unrecognized at first, and not until subsequent cases occurred, through direct or indirect contagion, was the diagnosis made. In one instance a valet occupying a flat in a block of residential buildings fell ill. He was seen by several doctors and said to be suffering from measles. He died on May 9th, and his death was certified as from that disease. Subsequent events showed that smallpox was the malady. The son of the deceased, an innkeeper in a Midland town, attended the funeral on May 11th. He fell ill on his return home and was supposed to be suffering from eczema; but his child, servant and nurse, took the disease which was found to be smallpox. Meanwhile, the widow was so much effected by her loss that it was thought well to place her in a parochial infirmary, where a ward attendant acquired smallpox from her clothing. When discharged she went to her stepdaughter's, where, on May 17th, she took her own and her late husband's clothing. On May 21st she was found to be suffering from smallpox. On May 29th one of the stepdaughter's children, and on June 1st another were taken ill with smallpox. On June 11th a laundry employee was reported to be suffering from smallpox. Three doctors had seen her and thought she had chicken-pox. On June 25th her sister-in-law was found to be suffering from the disease. It was then ascertained that the laundry company had washed for the valet. The numerous mistaken diagnoses in this series of cases need not produce surprise. Smallpox is now such a rare disease in English practice that the great majority of practitioners have never seen a case. In 1871, 1000 deaths occurred in London from smallpox out of a population of three and one-half millions; last year there were only 3 deaths out of a population of four and one-half millions.

The progress made by the London School of Tropical Medicine, in which the Colonial Secretary has shown so keen an interest since its opening in October last, has exceeded expectations and the question of enlargement is now engaging the serious attention of the committee. Seventy-six students have taken out courses of whom 31 were from the Colonial Office and 4 from the Foreign Office. There were also 7 missionaries and 34 private students, 7 of the latter being women graduates. It is anticipated, moreover, that when the Boer War is over a large

number of medical men from South Africa will seek admission. Both the museum and the library are growing apace.

Sir William Gairdner delivered a highly-instructive lecture at the Polyclinic on "Clinical Memories," in which he discussed a large number of subjects in the light of his mellowed experience. He thought that the gravity of the prognosis of mitral stenosis was much overstated in text-books. The late Dr. Angus Macdonald, in a work entitled "Heart-Disease in Pregnancy," described mitral stenosis as a complication of the greatest possible gravity; but a series of observations at the Glasgow Royal Infirmary, carried on over a long period, shows that this statement was exaggerated. Some of the patients had borne numerous children and been subject to conditions of prolonged anxiety and mental strain, yet they remained free from symptoms of heart-disease. In some cases mitral stenosis had been discovered accidentally or in later life. Sir William Gairdner concluded that mitral stenosis was in many instances a condition which caused but little disturbance even over a term of many years and while it necessarily involved risk the prognosis was not invariably grave. With regard to Dr. Austin Flint's murmur—a presystolic murmur with a normal mitral orifice and an incompetent aortic—when in 1865 Dr. Flint announced that he had seen two such cases, Sir William was incredulous. It seemed to him almost inconceivable that aortic regurgitation could possibly produce a murmur similar to that distinctive of mitral stenosis. The explanation that with much aortic regurgitation the left ventricle always contained sufficient blood to float up the mitral curtains to such a height that they constituted a virtual obstruction to the flow of blood from the auricle, did not find any confirmation in his own experience. But in recent years he had met with two cases which somewhat modified his view. He showed a specimen from one—a small aneurism just above the aortic valves projected so that it might during life diminish the size of the mitral orifice and so lead to a mitral obstructive murmur. The mitral valve was healthy, yet during life there was a rasping presystolic murmur and a presystolic thrill.

The centenary of the Royal College of Surgeons will be celebrated this month with fitting pomp. The events include demonstrations in the museum by the Curator, Prof. Stewart, the Conservator, lantern demonstrations by Dr. T. G. Brodie, Director of the Laboratories, full dress conversazioni, conferring of honorary fellowships on distinguished foreign surgeons, a festival dinner at which the Prince of Wales will be present, an exhibition of objects of interest in connection with the history of the college, and a conversazione at the Mansion House given by the Lord Mayor.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

ECTOPIC TESTOS—GELATIN INJECTIONS IN ANEURISM—GNATS IN SMALLPOX—DYSENTERIC ENTERITIS—TUBERCULOUS KIDNEY—OTITIS MEDIA AND BRAIN ABSCESS—CONSERVATIVE OOPHORECTOMY—TYPHOID FEVER SECONDARY TO INFLUENZA—ORTHOSTATIC ALBUMINURIA—SURGICAL ASEPSIS—URETERAL CATHETERISM—PERINEAL INCISION FOR PELVIC ABSCESS—VOLVULUS DURING PUERPERIUM—RAW MEAT AND TUBERCULOSIS.

Lucas-Championnière, at the Academy of Medicine, June 5, 1900, presented a patient, twenty-two years old, who had had double abdominal ectopic testicles and double hernia as well, operated on twelve years ago. His symptoms were general poor health and emaciation, and crises of pain in the right inguinal region. Double radical cure, with search for liberation and suture of the testicles to the scrotum, was done, first on the right, then on the left side. After considerable time the left organ showed signs of pain and troubled the patient so that it was removed. The cure of the hernias was complete and perfect. The right testicle remained healthy and in its new position and the sexual functions were normal. In all his other cases of a similar kind the testicles have been in the inguinal canal, but in this both were within the abdomen. Commonly these testicles are bound in place by fibrous lamellæ, all of which must be minutely dissected away before liberation is at all adequate and the organ can be brought down and sutured to the scrotum with any prospect of success. In about 45 cases throughout his experience this was the secret of his success. Castration should always be a last resort. The radical and permanent cure even without subsequent bandage or truss support has always been the rule in his cases.

Lancereaux presented a man who developed a large aneurism of the aorta two years ago. Thirty injections of gelatinized serum served to make the tumor decrease and harden. He had chronic malaria. Increase in weight and strength followed the treatment.

Hervieux reported the observations of a military surgeon during an epidemic of smallpox in a French provincial town. One quarter was sorely stricken, another not. In the latter there were no gnats and there had been no winds to carry them. Hence, the suggestion is offered that gnats may carry the germ of smallpox about as the mosquito carries the organism of malaria.

Rousseau Saint-Philippe (Bordeaux) stated that dysenteric enteritis of infants is happily affected by powder from fresh paste of guarana. A cold maceration is slowly made and the dose varies from half to two grams in twenty-four hours.

Pousson (Bordeaux) presented a tuberculous

kidney of unusual size, the seat of cystic degeneration and complete caseation of the kidney substance. The patient developed pulmonary tuberculosis after the organ had been removed. Another specimen on exhibition was that of a kidney apparently the seat of miliary and nodular tuberculosis, but microscopically the lesion was of the colon bacillus.

Routier reported a case in which some years ago he found a kidney the substance of which on nephrotomy was filled with more or less indefinite nodules. He decided to leave it *in situ*, merely suturing it up in position. Cure followed.

Potherat had cured a case of unilateral pyonephrosis by nephrotomy. The result was without fistula.

Dieulafoy at the meeting of June 20th detailed the following history: Male, thirty-one years old, soon after a mild suppurative otitis media was attacked suddenly by persistent, severe occipital headache, incoordinate, stumbling gait, ictus apoplectiforme, vomiting, somnolence, also falling toward the left; soon were added left facial paresis, nystagmus and bilateral retinitis. Cerebellar abscess was explored for in vain. At the autopsy was found a nut-sized abscess on the superior surface of the cerebellum. The case led to the following considerations: With rare exceptions cerebellar abscess is secondary to otitis media, whether acute or chronic, with or without exudation. The pus in the tympanic cavity, by reason of being in a close space, increases its virulence, soon spreads to the mastoid cells and antrum, and thence may be scattered in many directions, setting up cerebral or cerebro-spinal meningitis, pachymeningitis, phlebitis or thrombosis of the sinuses, cerebral or cerebellar abscess, etc. The cerebellar syndrome is as follows: Cephalagia, chiefly occipital; vertigo; jaundice; incoordination; stumbling, erratic gait; vomiting; nystagmus; cervical contracture; optic neuritis; muscular asthenia, somnolence or torpor, almost coma. Facial paresis and affection of the external oculomotor nerve are elements pointing to a localization of the trouble. This syndrome is very like that of mid-ear and labyrinth disease, but the following are important differential data. The pain in disease of the labyrinth has not the suddenness, intensity or localization of that of cerebellar abscess, and the somnolence and torpor of the latter are far greater. Again, all the motor signs in cerebral abscess are on the opposite side of the body to that of the lesion and of the otitis, pareses, paralyses, spasms, contractures, etc. Affections of speech and hemanopsia also bear upon the diagnosis. Tumors of the cerebellum give the same picture as abscess or more commonly add extraneous features by the lawless infiltration of the growth. Surgical evacuation of the pus is the sole treatment.

Laborde said that gray cerebellar matter appears inexcitable, but when the tumor involves the pedicle fibers symptoms ensue. Experimentation demonstrated accurate localization of lesion in each peduncle. A lesion in the middle peduncle causes the animal to turn on its own axis; in the superior peduncle, a variety of movements; in the inferior peduncle, a fall or a turning to the side of the lesion.

Gerne (Rouen) said that from October, 1898, to May, 1900, in 28 laparotomies he had ablated both tubes only seven times. In the cases in which they had been spared, nine were little altered, twelve very much so, and four were in a state of pyosalpingitis. Only one death had occurred from peritonitis. Among the others the results were very satisfactory, inflammatory exudate and uterine enlargement had decreased, and in many after several months the conditions were almost normal.

Potain at a meeting of the Society of the Hospitals, June 1st, called attention to the great number of cases of grip which later developed typhoid fever. The transformation regularly occurred in his six cases during the course or the decline of the grip or at the beginning of convalescence. The temperature ascended, headache dull and heavy, tumefaction of the spleen, ballooning of the abdomen, gurgling in the right iliac fossa, and rose spots, with a positive serum reaction, soon appeared. The course was not especially grave or severe, the fever averaged low, the pulse varied from 90 to 120, arterial pressure usually decreased, convalescence appeared about ten or twelve days after the spots. All of his cases recovered but fatalities sometimes occurred. There is nothing new in the combination of the two diseases, but during the last epidemic it had occurred very often. The accuracy of the diagnosis of the grip was undoubted, owing to the typical smyptoms of the prodromic and invasion stages.

Menetrier noted a case of grip followed by a benign typhoid, which, however, developed a phlebitis of the internal saphena. During the grip the diazol-urea reaction of Ehrlich and the serum reaction of Widal were absent, but they were positive during the typhoid.

Rendu reported the cases of two children who were attacked by grip, then by typhoid fever Both recovered.

Siredey recalled the death in 1889 of a young physician who contracted typhoid fever with albuminuria fifteen days after an attack of grip.

Widal stated that the diazol-urea reaction of Ehrlich is not a definite diagnostic point, because it appears in other pyrexias as well. Again, it is erroneous to exclude the diagnosis of enteric fever because the onset of the symptoms is unique and acute. There are many cases in which the disease begins as acutely and severely as grip.

Sevestre said that intense onset of typhoid fever is common in children.

Rendu gave the details of a case of pneu-

monia in a man, fifty-six years of age, which was complicated by a purulent sinovitis of the left sternoclavicular articulation and a serous one of the knees. The fluid in each joint contained purely pneumonococci of virulence. The former had to be opened, washed, drained, and the latter aspirated and immobilized in order to effect a cure.

Beclere gave the procedure for estimating the size of the heart by the radiograph.

Widal said at the session of June 8th that, although typhoid fever usually has a gradual invasion with a distinguishable prodromal stage, it may begin with great intensity and suddenness, especially in patients enfeebled by preliminary disease. He cited the following recent instances: A man in good health after dancing was suddenly attacked, took at once to bed, gave a marked serum reaction after five days and ran a typically severe course. Another patient while on a voyage and in fine health was suddenly seized with chills and terrific headache; typhoid fever developed from this outset. In another case a woman was overtaken while at her vocation in much the same way. The blood-cultures, 1 to 150, gave prompt agglutination after three days. Hence typhoid fever should be thought of, although the outset may not be slow and insidious, but rapid, frank and violent, much like a pneumonia.

Vincent added that among the young soldiers in Algiers he had seen many such cases. Often they were ascribed to combined malarial and enteric invasion. In his studies this was very far from the case. These cases ran a longer course with less promising prognosis than is the rule.

Widal differed by saying he had had no fatalities among his cases of this type, although one had had tuberculosis for four years.

Archard at the meeting held June 22d stated the history of a young girl suffering from orthostatic albuminuria. The albumin always appeared in the erect and disappeared in the recumbent position, and if rest in bed were maintained it took some time for the erect posture to cause a relapse. She showed no neuropathic stigmata, no vasomotor phenomena of the extremities—both so common in these cases. The sole cause appeared a febrile condition at six years of age with convulsions and albuminuria. Cryoscopic study demonstrated normal molecular concentration of the serum and the urine. The renal circulation, estimated according to the method of von Koranyi, was rapid. The elimination of methyl blue was normal for the quantity but slightly delayed. Phloridzine regularly caused glycosuria. The same results were obtained during crises of albuminuria and periods of normal urine. The conclusion is that only portions and not the whole of the parenchyma is at fault.

Widal agreed with the speaker that these light degrees of albuminuria certainly denote some kidney lesion. He has never seen a case of orthostatic albuminuria, but desired to report two cases of slight albuminuria. One in a child of twelve years, who when six years old had scarlatina and malaria when eight. The methyl-blue test was normal. But the albuminuria persisted without any signs of uremia. The second patient was twenty-nine years of age and fourteen years ago had had typhoid fever. His kidneys did not filtrate rapidly methyl blue, iodide of potash or sodium salicylate, but the albuminuria is the sole symptom of his disease.

Reynier at the meeting of the Surgical Society May 30th said his idea of surgical asepsis is concerned in never having direct contact with pus and in keeping the hands protected in such examinations as those of the rectum. He differed widely from Quénu who claims asepsis is preferable to antisepsis. In his experience certain antiseptics, perhaps especially permanganate of potash, produce a sufficiently reliable asepsis of the hands. The middle course seemed wisest, namely, combining good antisepsis and careful asepsis.

Delbet contrary to the assertions of Quénu claims that the hands may be made sterile in general and in particular after infection by contact with even the most virulent germs. This has been proved by his experiments of plunging the hands and arms into cultures of both aerobic and anaerobic organisms, of carefully washing them and then of taking cultures. He found that in each case the cultures remained without growth. He therefore differs from those who claim that a surgeon whose hands have touched pus or the rectum, for example, is not only septic but filthy. His method is not to rely on asepsis rather than antiseptics, but to scrub the hands thoroughly with soap and warm water and immerse in concentrated alcohol, then in bichloride of mercury until they appear well soaked all over.

Albarran differed from the views of Tuffier expressed at the preceding meeting to the effect that ureteral catheterism is not necessary in renal tuberculosis to determine the state of the opposite organ in the general run of cases. In one class the point could be granted, namely, that in which the ureter of the diseased side is occluded and the urine from the bladder is normal. In all other cases the mixed urine is almost certain to be infected and the use of the ureteral exploration necessary. He holds that it is not indicated to leave such a catheter *in situ* longer than to collect a specimen, states that in a large number of observations he has never found it dangerous, and in general compares it to vesical catheterism which one does not hesitate to practise because it is occasionally followed by unfavorable results.

De Langlade (Marseilles) reported a case of low pelvic abscess following appendicitis and

situate in front of the rectum and palpable through it. He opened, evacuated, drained and cured the condition through the prerectal space.

Rochard reported at the June 20th meeting a case of volvulus in a woman recently confined. The symptoms were those of acute obstruction and the physical signs of a tender, painful, tympanitic tumor in the left side. The volvulus was twisted from left to right and pushed through a false opening in the mesentery. Reduction was easy and recovery complete.

Richet and Hericourt at the session of the Biological Society of June 2d presented the results of their experiments as to diet in tuberculosis among dogs. After inoculation one set was fed on ordinary food; a second on cooked meat; all of these two series died. The third set was fed on raw beef and none died. In another series of animals a preliminary feeding of raw beef and beef-juice was given and to a fifth series good ordinary food. Later these two groups were inoculated. All of the latter and not one of the former died within six months. Usually dogs survive the inoculation only three months. The weight of meat should be about one per cent. of that of the animal. The conclusions are that in the dog raw meat and raw beef-juice fortify against the disease by a highly-increased nutrition.

SOCIETY PROCEEDINGS.

THE NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting held Monday, April 16, 1900.

The President, Frederick Holme Wiggin, M. D., in the Chair.

Suppuration in Middle Ear.—Dr. J. H. Woodward said that in spite of free drainage through the drum membrane in suppurative disease of the ear, the disease may reach the cranial cavity. For safety, the conditions causing the disease must be entirely removed. The objective symptoms are usually sufficient guide to show the necessity for operation. If there is swelling behind the auricle, no physician will refrain from operating; but even in the absence of swelling it is not well to delay too long by using palliative measures. There are six indications for the mastoid operation: (1) Bulging or swelling of the upper posterior quadrant of the membrana tympani, or Schrapnell's membrane, and bulging of the inner extremity of the membrane. The pus is sometimes very tenacious, but the retention of pus is a very serious matter. There should be an incision in the drumhead so as to provide sufficient drainage. It is more prudent to operate than to try palliative measures when the bulging occurs during diphtheria, scarlet fever, or influenza. (2) Persistent tenderness over the mastoid process. The indication is for operation both in acute and chronic cases, although often there is very little pus and most physicians object to operating unless there is pus. From this opinion Dr. Woodward differs. There may be fungus granulations without the appearance of much pus and there an operation will eradicate. (3) Swelling of the soft parts over the mastoid process. The ear should be opened whenever this swelling is observed. The subsiding of the swelling is no guarantee of cure. (4) Granulations and fistulæ in the external auditory canal. (5) Persistent and relapsing fistulæ behind the auricle. Fistulæ which alternately open and close are more dangerous than those which remain open, as the former are more liable to lead to sinus thrombosis. An early opening of such is therefore indicated. (6) Persistent and offensive otorrhea.

In the discussion Dr. Francis J. Quinlan said that all middle-ear suppuration is suspicious. No life insurance company will accept a man with a chronic suppuration of the middle ear. Moreover, such suppuration is a ready path for the entrance of infection. Any pain over the antrum, pain over the tip, or pain over the middle plate of the mastoid, is sufficient indication for the mastoid operation. Nowadays the operation is not difficult. With a little care the cavity cannot only be emptied, but the whole area thrown open to inspection. It is not only necessary to enter the mastoid process, but it is most important to open all its cells. Any small granulations left may lead to intracranial complications

Radical Operation for Uterine Cancer.—Dr. Howard A. Kelly of Johns Hopkins asked what systematic effort is the profession making to get at the root of the cancer evil. Of the various forms, cancer of the uterus is the most serious, because of its relative frequency. Welch reports that of 31,482 cancer cases, 29.5 per cent., approximately one-third, were of the uterus. In trying to forecast a method of treatment for the future the dictum worthy of consideration seems to be to remove the entire organ in every case of cancer of the uterus. There is a temptation to do less radical operations—to amputate the cervix, or to remove the body of the uterus—but partial operation is unjustifiable. In 176 cases of his own he has found the exceptions as to limitation of the disease so numerous that they must be reckoned as the rule. In many cases in which he has found the vaginal end of the cervix infected, the body was diseased as well. In one case the disease skipped the body and appeared in the tubes. It is well to remove the tubes with uterus in all cases of cancer of the body.

The next great danger is in the vaginal vault. Cervical cancer often extends down the vagina under the mucosa without at first showing its presence. In every operation, therefore, that part of the vagina in which cancerous foci may be expected to exist should also be removed. The operator should give the disease a wide

berth at the vaginal vault. He should cut 2 to 2½ cm. away from it. The advance of the disease is usually up the cervix into the body. In very advanced cases the whole cervix is eaten away and the broad ligament involved. In many cases in which there is great pain in cancer of the uterus, the pain is not due to the cancer direct, but to the accident of occlusion of the cervical canal by the diseased growth and the consequent imprisonment of the secretions. In such cases there should be an opening through the carcinomatous mass to let out the pus and the patient will get along comfortably in spite of the cancer. Often before the disease has gone very far in any other direction, the bladder has become involved, and there is also, as a rule, considerable involvement laterally. The mode of extension is a point upon which surgeons differ very much. In fact, here is the crux of the whole question. In the extention of cancer of the cervix right and left out through the bases of the broad ligaments the ureters are soon reached, the pelvic walls and the glands are infected and it is difficult to decide what parts are diseased. It is not certain that the disease always proceeds continuously. There may be discrete foci and invasion of tissues by jumps. Dr. Kelly has removed many glands which macroscopically gave the appearance of being diseased, but microscopically proved to be sound. He thinks that the operator should concentrate all his attention upon giving the cervix a wide berth and not worry about tissues beyond. In all but five per cent. of the cases he has seen, progress laterally has been continuous and not by metastases. Winter has reported 42 cases in only two of which the glands were found to be diseased.

Dr. Kelly asked what is the danger of planting cancerous foci in sound tissue during an operation? Experiments on animals have shown that it is impossible to inoculate tissues with cancer unless it is aseptically done and it is, therefore, improbable that there is a liability to such an accident when there is drainage. When there is a recurrence after, say two years, it is a question whether it is not a new growth, rather than a recurrence due to inoculation during the operation.

Do Radical Operations Cure?—There is a certain fear of the radical operation because specialists often feel that there is no lasting benefit and they do it rather as a last resort. In refutation Dr. Kelly referred to 103 cases operated upon. Of 61 cases of squamous carcinoma of the cervix, 20 per cent. are living; of 30 cases of adenocarcinoma of the body, 63 per cent. remained well. Dr. Kelly condemns unqualifiedly the old mode of operating by simply skinning out the uterus, because it is followed too often by recurrence. He advises the catheterizing of the ureters and marking them out by inserting bougies. It is difficult to distinguish the ureters and pushing them aside delays the operation and makes the difficulties almost insurmountable, to say nothing of the risk of injuring them. The disease must be given space by ligating far out into the parametrium.

Radical Operation.—Dr. Kelly employs a modification of the method of Dr. X. O. Werder of Pittsburg. First he does a thorough curettage, then the vagina is divided on all sides one inch below the diseased area. The vesico-uterine peritoneal fold is widely opened as is also the posterior cul-de-sac. The uterus is brought out through the posterior opening. The peritoneum is protected by gauze-packing. The uterus is then bisected from fundus to cervix. Afterward it is caught by the cervix and split again. The next step is enucleation on the side least diseased. It is Dr. Kelly's method to remove the tissues down to the point where infiltration is deepest and then concentrate all the energy on the most complete removal of the last segment. The peritoneum is then closed over the raw areas made by the excision and the pelvic cavity is lightly packed with gauze. Operating in this way by quadrisecting the uterus, the maximum room and mobility are secured for working through the vagina. The difficulty of the operation really begins when the operator attacks the nodules of disease farthest out and it is a question whether ligature or cautery gives a chance to go deepest. Much credit is due Dr. John Byrne for advocating the cautery in advanced cases.

Old Methods Unsatisfactory.—In discussion Dr. Henry C. Coe said that he has found the old method of skinning out the uterus unsatisfactory. It is followed almost inevitably by recurrence in from two to three years. Some weeks ago he read a paper in which he expressed the view that the operation of the future for cancer of the uterus would be radical abdominal hysterectomy. He thought that this method, although serious, was the most scientific, as it enabled the operator to reach not only the uterus but all suspicious tissues and glands. During an operation it is sometimes very difficult to decide what is diseased tissue and what is merely inflamed. He upholds Dr. Byrne's theory of the value of the cautery. It seems a very rational method and in the hands of Dr. Byrne it has certainly given brilliant results. Cancer does not always seem to extend by continuity; if it did, it would be impossible to explain some of the cases of recurrence. In a case of his there was a small malignant adenoma nodule in a uterus that was removed, yet there was recurrence in the scar. One case was most unfavorable at operation, yet the patient lived five years.

Neglected Cancer.—Dr. E. H. Grandin said that he had examined 3000 women and had found cancer of the uterus relatively uncommon. In all there had been but 48 cases of cancer of the uterus. Of these 30 were seen too late for operation and he had given them the treatment customary in inoperable cases. The great trouble is that cancer of the uterus comes to the specialist too late. The cases under his observation had all suffered a long time from hemorrhages, which

received no attention because supposed to be due to the menopause. He has tried curettage, cautery and caustic applications in advanced cases, and in his opinion the less done the better. In the remaining 18 cases total hysterectomy was the operation of choice where the disease involved the corpus uteri. In 7 cases traced there has been no recurrence. One case was operated on six years ago, the others from six months to four years and a half. In six cases in which the portio vaginalis was involved the operation selected was vaginal hysterectomy, either by clamp or ligature. In 4 cases traced there was recurrence in all but one and that was very recent. Recurrence took place in from eighteen months to two years. From his experience he believed the disease curable if taken early enough. His experience has disposed him to reject vaginal hysterectomy, either by clamp or ligature, for cancer of the uterus. There can be no thorough resection of the broad ligaments by this method, as is possible from above. In any case as much of the vagina as possible should be removed, as this is the site of recurrence. Dr. Grandin thinks that the method of the future will be a combination of knife and cautery, as affording the best protection against recurrence.

Dr. William R. Pryor said that in his opinion the vaginal operation does not meet the requirements laid down by Dr. Kelly. He agrees with the latter that the operation should be the most radical possible, but can this be done through the vagina? To him the vaginal operation seems merely palliative. The operation through the abdomen does not necessitate any preliminary proceedings for marking out anatomical relations, such as bougies for the ureters. Every drop of blood is precious to the patient and the internal iliac arteries should be ligated. This can be done with perfect safety.

Dr. Phineas H. Ingalls of Hartford, Conn., present by invitation, then said that the chief difficulty in successfully treating cancer of the uterus lies in the fact that the general practitioner who first sees the cases ascribes all irregularities of menstruation to the menopause if the patient is between 35 and 50 years. Hence, the disease is far advanced before it comes to the specialist for operation. He would like to know in how many cases treated by Dr. Kelly in which there had been no recurrence for five years, palpation of the broad ligament showed it free from the disease at the time of operation. In his experience operations for cancer of the body do better than operations on the cervix. As for advanced cases the use of cautery and strong caustics seem to him only to aggravate the disease and hasten death. It is better to let them alone. In some advanced cases he has found that those treated by palliative measures without operation have lived nearly as long as those operated on.

Cancer a Local Disease.—Dr. Herman J. Boldt said that cancer of the uterus is undoubtedly a local disease in its initial stages; hence, if the diagnosis is correct and the proper treatment resorted to at once, cure will result. The cautery seems to him especially advisable in the treatment of the points where the neoplastic recurrence is most feared. Personally he has had little experience with the method, but the results which Byrne, Mackenrodt and others obtain leave no doubt as to its efficacy. He has treated all cases of cancer of the uterus with a direct mortality of 5.4 per cent. and a mortality from recurrence of 34.2 per cent. Those living with recurrence constitute 2.7 per cent.; those living and free from recurrence, 24.3 per cent. No report has been obtained from 30.6 per cent. After his first year's experience he never did any shelling out. There is great danger, as Dr. Kelly said, of injuring the ureters and he commends the use of bougies.

Dr. George Tucker Harrison endorsed everything that Dr. Kelly said. He wanted particularly to read a lecture to the general practitioner, who does not recognize the gravity of menstrual symptoms that are atypical and so does not send the cancer cases to the specialist soon enough. Cancer is a local disease susceptible of cure if taken soon enough. Instead of 15 to 20 per cent. cured, he thinks there might be 80 to 85 per cent. if the disease were taken soon enough. This is the great point. He is disappointed in his own results by the vaginal route.

Dr. Joseph E. Janvrin said that four years ago last February he read a paper describing sixteen cases of cancer of the uterus beginning in the cervix in which the uterus was simply shelled out. Of the 16 cases, 12 date back four years or more and 1 twelve years. Of these, 4 are living and in perfect health. Of the remaining 4, 1 dates back four months, 1 twenty-two months, and 2 five weeks. Of these 2 died within the year and two are living and well. This gives 37 ½ per cent. cured. These cases have been selected as showing the outcome when the disease began in the cervix and was in the majority of cases confined to that part. In every instance the diseased condition of the cervix was well marked. He has no record of cases operated upon before four years ago, but his recollection is that the results have been fully up to the percentage given. Out of 30 cases he is sure over one-third has been free from recurrence. In 4 of the 16 the disease extended down upon the mucous membrane of the vagina, yet 3 of these were cured. He believes that when the disease begins in the cervix, it is more liable to invade the vaginal mucous membrane than to extend down under it. He thinks that vaginal hysterectomy should be limited to cases in which the disease is confined to the cervix, or to the cervix and the mucous membrane of the upper part of the vagina, or where the disease, having involved these parts, is beginning to develop on the mucous membrane of the lining of the uterus itself. He thinks a combined abdominal and vaginal operation, or the radical abdominal operation, the best if we are to

resort to radical operation at all. As a rule he does not operate upon advanced cases, but wherever a case is operable it can be successfully reached by the abdominal route.

Dr. J. Riddle Goffe said that recent statistics have shown a startling increase in cancer in England. There are those who claim that this increase is only apparent and not real, due to improved methods of diagnosis; but the men most experienced in cancer statistics insist upon the real rapidity of increase and also that the disease is occurring in younger women than formerly. We can not exaggerate the seriousness of the condition and the results attained are hardly sufficient to encourage the specialist to try to do anything. The proper question should be, What shall we do to prevent cancer of the cervix and uterus? In Dr. Goffe's opinion vaginal operation is the only one justifiable in cancer of the uterus because of the danger of infecting sound tissues by other methods of operation. Dr. Goffe objects to the quadrisection of the uterus as advocated by Dr. Kelly, as the less interference with the diseased tissues, the less the danger of infection. The inverting of a diseased cervix seems to be an excellent way to inoculate the peritoneal cavity. Dr. Goffe avoids inverting the uterus. He draws the uterus well down with a traction clamp and then extirpates it.

Dr. E. E. Tull presented a record of 20 cases of cancer of the uterus upon which he has operated in hospital practice since 1890. Four patients are living. Two of them were operated on in 1890. The operation was by the vaginal route, and in all the cases the diagnosis was confirmed by microscopic examination. He does not consider the vaginal operation easy and in an advanced case would first use the cautery and then open the abdomen and remove the diseased parts as thoroughly as possible.

Dr. H. N. Vineberg said that he has examined about 12,000 women in dispensary practice and among these he has met with only about 12 cases of cancer of the uterus. Most of these women had borne children and had had torn cervices which had not been repaired. The frequency with which cancer occurs in these lacerations has given color to the view that they cause cancer. The general practitioner is not so much to blame. Sometimes cancer of the uterus does not give rise to suspicious symptoms until it is too late to operate. A woman was recently brought to him the day after she had seen the general practitioner and the case was already inoperable. He agreed with Dr. Goffe's objections and wished to suggest another modification of Dr. Kelly's method, *viz.*, a longitudinal incision in the anterior vaginal wall which will enable the operator to invert the uterus without entering the peritoneal cavity posteriorly.

Dr. Ralph Waldo said that he wanted to ask, What is an operable cancer? Not over one in ten ought to be considered operable and there is rarely a case in which the disease is of six months' standing which is not so far advanced that recurrence will inevitably take place.

Dr. John Byrne of Brooklyn said that eight years ago he undertook to analyze the published statistics of cancer of the uterus. There has been a great tendency to underrate the danger of hysterectomy on account of the exceptionally favorable statistics of a few of the most successful operators. He looked up 235 cases by the great operators of Germany, France and elsewhere. Of these cases 63, or 27 per cent., had a recurrence. Nothing was said, however, of the other 172. Such gaps make the task of collecting trustworthy statistics almost impossible. Olshausen reported 163 cases. Of these 42 only were living at the end of two years. Of the 155 who survived the operation only 19 ultimately remained free from recurrence. Of late years he has used the cautery freely and roasted the cavity thoroughly. He rarely carries the actual cauterization to the fundus. In circumscribed cancer of the cervix the use of the cautery and the roasting of the cavity are safe and give the best chance of cure. Many of his cases have lived eight or ten years or even longer. The effect of the electrocautery knife on the surrounding tissues may explain the absence of fever and pain after the operation, and the freedom from the disease of the scar tissue in case of recurrence together with the rarity of recurrence. The improved electric apparatus of the present leaves no excuse for apathy in regard to the use of the cautery.

Dr. Kelly in conclusion said that the cause of the cautery as presented by Dr. Byrne is very convincing. He thinks that every atypical uterine discharge should be regarded as suspicious; not only that, but every woman who has borne a child should go to a specialist to be examined. In this way he thinks that the 20,000 cases of cancer which will come to the specialist within the next five years may be saved.

THE NEW YORK ACADEMY OF MEDICINE—SECTION ON SURGERY.

Stated Meeting, held April 9, 1900.

Charles M. Dowd, M.D., Chairman.

Excision of Subclavian.—Dr. John F. Erdmann presented an athlete in whom an accident led to the fracture of the left clavicle involving the subclavian artery. A complete resection of the subclavian was made although the subclavian vein was carefully preserved. For a long time the fracture of the clavicle healed only by fibrous union, and it seemed doubtful whether bony union would ever take place. After a time the man was able to resume his occupation as an exhibiting athlete, the left arm being apparently as strong as before. The pulse is plainly to be felt at the wrist and is as strong as on the other side. The development of the collateral circulation has evidently completely made up for the obliteration of the subclavian.

Sphenoid Sarcoma.—Dr. Joseph A. Blake presented a patient from whom a sarcoma of the sphenoidal sinus was removed three years and eight months ago and has not recurred. The left nasal fossa was at that time completely filled with a tumor, a portion of which was removed. It proved on microscopic examination to be a round-celled sarcoma. Radical removal was then undertaken, previous ligation of the carotid being performed to lessen the hemorrhage. The patient made an uneventful recovery and was able to leave the hospital two weeks after the operation. In the left eye the vision is perfect notwithstanding the disturbance of the circulation by ligation of the carotid.

Bottini's Operation for Suprapubic Fistula.—Dr. Willy Meyer presented a patient who had come to him in November, 1898, with marked urinary symptoms. There was medium enlargement of the prostate and the cystoscope revealed advanced catarrh of the bladder. Three vesical calculi were found to be present. They were removed by the suprapubic route. Infection of the perivesical tissues took place, and the suprapubic incision failed to close completely, and despite various methods of treatment a persistent fistula remained. The man had returned to his work, but was so much disturbed by the presence of the urinary fistula that life became almost unbearable. When he returned to the hospital in November, 1899, about one-half of the urine was passing through the natural passages and one-half through the suprapubic opening. All apparatus for permanent drainage of the bladder were unsatisfactory and so Dr. Meyer suggested a Bottini operation in order to open up the prostatic urethra more thoroughly. With the fistula present there would be very little inconvenience even if enough inflammatory reaction occurred in the prostate to occlude the urethra for some little time after the operation. The Bottini instrument was used and on the second day after the flow of urine through the urethra was perfectly free. The fistula did not, however, close at once. The passage was a tortuous one because of a certain amount of sloughing of the prevesical connective tissue which had taken place shortly after the operation for the removal of the calculi. The urine was in an infected condition from the long presence of the calculi. Balsam of Peru was injected a number of times into the fistulous opening in the hope that it would set up sufficient irritation to cause closure of the tract. It failed to do so, however. Several ounces of water were then injected into the bladder *per urethram* and fifteen minims of pure carbolic acid were injected through the fistula. The amount of water in the bladder was sufficient to make the carbolic acid solution which would result within that viscus less than one-half per cent. in strength. The carbolic acid injection was followed almost immediately by an injection of pure alcohol. After this the fistula promptly closed up and has not reopened since. The patient has gained considerably in weight and is very well satisfied with the results. As may be noted here, as the result of the suppurative process at the time of the first operation, some destruction of prevesical tissues took place with a resultant dimpling in the suprapubic region.

Removal of One-half of Tongue.—Dr. B. Farquhar Curtis presented two patients from one of whom one-half the tongue and from the other one-half the tongue and the tonsil on the same side had been removed. The first patient, a man sixty-three years of age, denies syphilis, but admits very frequent use of the pipe. Last September he noted a fissure on his tongue which despite treatment refused to heal. Induration followed and in January the enlargement of this half of the tongue was very noticeable. Toward the end of February he applied for treatment at the hospital. The condition was evidently cancerous. One-half the tongue was removed February 22d by a combination of the Kocher and Whitehead methods. The Kocher incision, just beneath the jaw externally, was first made and all the glands into which lymphatics from the tongue emptied were secured and loosened from their position. The lingual artery on this side was then tied, the mouth opened with a Whitehead gag, the tongue split down the middle and removed from within the mouth. By this means very little blood is lost and the tongue is not crowded through the Kocher incision almost surely infecting the tissues in this region, while the glands are much more thoroughly removed than is possible by the Whitehead method alone. The tip of the tongue was then turned around on itself and stitched in place so as to avoid the sharp point that is so disfiguring when the mouth is open. The patient now talks distinctly and swallows easily. He wished to get up a few days after the operation and has been able to be around since the first week.

The second patient, a man fifty-five years of age, suffered for some time from an ulcer of the tonsil which absolutely refused to heal. He also denies syphilitic history and as the floor of the ulcer had become thickened and indurated and the tissues around it were becoming infiltrated, it was evident that a neoplasm was in question. The patient could open his jaw well so that there was no posterior infiltration in the tonsilar regions, but there was considerable infiltration forward into the tongue. The operation chosen was that of Mikulicz. The incision extended from beneath the ear to the ramus of the jaw. The ramus was divided after separating the periosteum and the tonsil removed through the opening thus obtained. The carotid was exposed and tied and the glands lying near it were removed. This procedure gives excellent control of the hemorrhage. This method of operating gives much more room, especially in elderly people, than does division of the jaw. The tongue was found to be much more involved than had been thought. One-half that organ was removed. Recovery was uneventful, although ra-

ther slow. Considerable time was required for the granulation of tissues to close up the opening made. The man is able to talk reasonably well, but he has some difficulty as yet in swallowing.

Tracheotomy Before Removal of the Tongue.—Dr. Willy Meyer said that in these cases of removal of the tongue he has always found it advisable to do a preliminary tracheotomy in order to avoid the aspiration of blood and mucous material from the mouth into the respiratory passages during the course of the operation. As Dr. Curtis made no mention of this procedure he wondered whether he considered it a necessary preliminary.

Dr. Dowd said that by this combination of the Kocher and Whitehead methods of operation, the bleeding is so thoroughly controlled by preliminary ligation of the lingual artery through the Kocher incision that very little hemorrhage results during the operation. There was not, then, any necessity for the preliminary tracheotomy and in Dr. Curtis' absence he could answer that this was not Dr. Curtis' custom.

Dr. Torek said that by the adoption of Rose's position, in which the head hangs perpendicularly, any blood present in the mouth during the operation could be kept from entering the respiratory passages. This position was sometimes spoken of as the Trendelenburg position, but falsely. No mere inclination of the head downward is sufficient to prevent the blood finding its way into the lungs. It must hang perpendicularly.

Dr. Berg reported a case in which as a preliminary to the removal of the whole tongue a low tracheotomy had been done and a diffuse, although not virulent, mediastinitis had resulted and very much complicated the aftercourse of the case.

Monsel's Anastomosis.—Dr. Berg reported a case of rectal cancer which had been operated on some months ago. As the patient was in very bad condition toward the end of the operation, the sigmoid had simply been freed after the removal of some four inches of the rectum and had been brought down to meet the portion of rectum left at the anus. There not being time for the more complicated methods of anastomosis, the Monsel method was resorted to. Some days after the operation a fistula was established at the point of anastomosis and has continued ever since. There is a ring of dense tissue where the anastomosis was made and it is still in doubt whether this is due to a recurrence of the carcinoma or to inflammatory tissue. On the whole, however, the Monsel operation has not proved a very satisfactory one. In the discussion Dr. Tuttle said that Dr. Berg's experience with the Monsel operation is but a repetition of his own and he has tried it in five cases. In all of them a stricture occurred at the point of anastomosis. In three of Dr. Tuttle's cases fistula developed. In five other cases of carcinoma of the rectum of almost the same character as those operated on by the Monsel method, the Murphy button was used and in no case did a fistula result, nor was there any sign of a stricture. Dr. Tuttle is thoroughly discouraged as to the use of the Monsel anastomosis in these cases.

Oophorectomy for Mammary Cancer.—Dr. Brewer presented for Dr. Lilienthal a case of recurrent carcinoma of the breast the progress of which has seemingly been stopped by removal of the ovaries. The patient, a woman about forty years of age, was admitted to Mt. Sinai Hospital last fall and on September 26th a complete Halsted operation was done for cancer of the breast. Notwithstanding the fact that the glands in the axilla and in the supraclavicular regions were removed and both pectoral muscles excised, recurrence took place very rapidly. The patient was readmitted to the hospital on January 21st with nodules of recurrent carcinomatous tissue all along the line of the scar. Her general condition was very poor. Cancer cachexia had developed and the case seemed absolutely hopeless. As a last resort it was resolved to do Beetson's operation, namely, the removal of the ovaries, in the hope of preventing the further development of the cancer. Dr. Mundé did the operation. Convalescence from it was uneventful and the patient's condition at once began to improve. She gained in weight, her color became better, and the cancerous nodules lessened in size and in consistency. They have not entirely disappeared, but the condition of the woman is so much better than it was that the effect of oophorectomy is little less than marvellous.

In the discussion Dr. Manley said that three years ago a patient came to him suffering from mammary cancer. She absolutely refused operation and the tumor was removed by caustics. It returned although not nearly so rapidly as might have been expected. Some months ago her condition had become so bad that he suggested oophorectomy. The suggestion was accepted. The operation was followed by a very prompt amelioration of the general condition and by great lessening in the size of the tumor at the points of recurrence. The tumor did not, however, disappear and it is doubtful what the ultimate result will be. After the oophorectomy, small doses of thyroid extract were given as originally recommended by Beetson. The broken-down tissues promptly healed under its administration, although it is doubtful how much is to be attributed to the thyroid medication.

Dr. Coley said that the improvement noted in Dr. Lilienthal's case is the same as that which has been noted in a certain number of cases in England. Radical cure has, however, never been reported after this operation in any hands. The procedure seems to act as does the ligation of an important blood-vessel to the part in which the tumor is growing. The tying of the carotid, for instance, lessens the size of malignant tumors of the parotid region so much and relieves bothersome symptoms to an extent that for a time makes it seem to be absolutely curative in effect. After the establishment of the collateral

circulation, however, the malignant tumor takes on again its old growth and proceeds to a fatal termination. Of Cheyne's two oophorectomies for mammary cancer, in one there was slight temporary improvement, in the other absolutely no effect on the neoplasm was produced by the operation. Beetson's theory is that somehow cancers originate from the ovary. Needless to say this is contradicted by the opinions of all pathologists and clinicians.

The Conjoined Tendon.—Dr. Joseph A. Blake discussed the structures involved in inguinal hernia and elucidated the confusion which has arisen from the fact that two very different portions of tissue have in recent years been called the conjoined tendon by different sets of writers. In America when we speak of the conjoined tendon we generally mean the combined fibers of insertion of the internal oblique and the transversalis muscles into the pubic bone. This structure is never very wide. In 25 selected muscular subjects it proved to be always less than five-eighths of an inch across, while, as a rule, it is less than one-half an inch in width and sometimes is a very insignificant bit of tissue lying along the rectus muscle at its pubic insertion. The other structure which has been called the conjoined tendon is the transversalis fascia or aponeurosis. It is to this structure that Bloodgood and Halsted refer when they speak of the obliteration of the conjoined tendon in cases of direct hernia in which there is a large opening into the belly cavity. This use of conjoined tendon is sanctioned by Quain. It has led to no little confusion since the structure we call the conjoined tendon usually here in America is so weak that it may be neglected entirely in the radical cure of hernia.

Sterilization of Catgut.—Dr. C. A. Elsberg demonstrated a new method of sterilizing catgut. The use of catgut in surgery has been not a little curtailed by the fact that this substance is so difficult of sterilization. Dr. Elsberg's method takes advantage of the principle that the chemical reagent which precipitates a substance from its solutions will not dissolve or affect that substance at other times. Ammonium sulphate is used to precipitate albumin from its solutions. Theoretically at least, then, it might be expected not to effect the albumin of catgut. Experiments have proved that the theoretical principle holds in practice and that catgut may be boiled for long periods in a solution of ammonium sulphate without its quality or tensile strength being interfered with. In practice the method used is as follows: The catgut is immersed for from twenty-four to thirty-six hours in a solution of alcohol and ether in order to remove all fatty matters. It is then wound in a single layer on glass spools and boiled for ten to thirty minutes in a saturated solution of ammonium sulphate in water. The saturated solution of ammonium sulphate boils at 106° to 108° C. This is from 220° to 226° F. After boiling the spools of catgut are removed and as a certain amount of the ammonium sulphate from the saturated solution has been deposited on them, they are plunged for a minute or two in sterile water, or in some antiseptic solution that removes the salt. The catgut does not swell up during the boiling, is not changed in appearance at all, does not lose in pliability, nor in tensile strength. On the contrary very fine catgut seems to become stronger through the boiling process to which it is submitted. Catgut so treated is absorbed from the fourth to the eighth day. A series of observations made with commercial catgut shows that it is always sterile after five minutes of boiling. Experimentally catgut was deliberately inoculated with ordinary pus micro-organisms with other germs and with anthrax spores. Pus micro-organisms were always killed by three to five minutes of boiling and anthrax within five minutes. The catgut may be chromicized to suit the convenience of the operator. If it is desired that the gut should resist absorption for long periods it need only be immersed in the solution of chromic acid which the operator's experience has taught him to be suited for the purpose. The boiling in ammonium sulphate may then be continued just as before and the result will be the same.

Advantages of the Method.—The boiling process may be repeated as often as is desired. Catgut can be thoroughly sterilized in a few minutes. The process is extremely simple and not costly. Chemically pure ammonium sulphate can be bought for fifteen to twenty-five cents a pound. While in the various alcohol methods the low boiling-point at which sterilization is accomplished made the result dubious, the high boiling-point of the saturated solution of ammonium sulphate makes assured the destruction of all micro-organisms. Absolutely no apparatus is needed for the sterilization, test-tube or a laboratory beaker being amply sufficient. If the catgut after the removal of all the fatty material in it has been kept stored for some time in a two-per-cent. carbolic-acid solution, it can be gotten ready for use in from two to five minutes.

In answer to a question Dr. Elsberg said that more than a dozen different kinds of catgut from various makers had been experimented with by this method, all of them responded equally well. None of them were rendered brittle or inflexible and all of them were absolutely sterilized. Heretofore in hospitals the purchase of the finer grades of catgut has made no inconsiderable item of expense. These finer grades have been purchased because they could be more assuredly sterilized. No little saving can be effected by this simple method of sterilization.

In discussion Dr. Brewer said that he had used catgut sterilized by Dr. Elsberg's method at Mt. Sinai and at the Charity Hospital. He has been very well satisfied with it and is persuaded that this method of sterilization is a distinct improvement in the preparation of catgut for surgical work.

Dr. Joseph Blake said that the sterilization of

catgut by this method is more assured because the heat is applied in the presence of moisture and so the great sterilizing factor, the hydration of the chemical elements of the bacteria, is brought into play. Under the old methods boiling in alcohol, etc., there is no hydration. Commercial catgut is often perfectly sterile. In fact, most samples are germ-free. Catgut might be used for long periods without causing infection and yet the method of sterilization has very little to do with that happy result. Old methods of sterilization certainly are distrusted by many operators. This thorough boiling at a temperature of nearly 110° C. leaves no doubt, however, of the production of absolute sterility.

In closing the discussion, Dr. Elsberg said that Arpad Gerster had used catgut prepared in this way in an extensive operation for the removal of the breast, 150 ligatures being employed and proved to be absolutely sterile. It has been used also by him in a number of herniotomies. There seems every reason to think that the sterilization has been absolutely successful in all cases.

REVIEWS.

A Manual of Medicine. Edited by W. H. Allchin, M.D., Volume I. General Diseases. The Macmillan Company, New York, 1900.

Practically all of the articles in this book are written by specialists. Dr. James Cantlie, Lecturer at the School of Tropical Medicine, writes the articles on Cholera, Plague, Leprosy, and Beriberi. Dr. Sydney Monckton Copeman writes the articles on Variola and Vaccinia. Dr. German Sims Woodhead writes the article on the infections, Sapremia, Septicemia and Pyemia. In general, this first volume shows that an earnest effort is to be made in this latest manual of medicine to present the various topics of modern medical science in a thoroughly up to date fashion. Volume I. contains 435 pages to which there are over twenty contributors. Nearly all of them have already attracted attention by well-known contributions to the special subjects which they write. The book will undoubtedly have a place despite the number of text-books in general medicine that are constantly being issued. The publishers are to be congratulated on adopting the smaller form, 8 x 5½ inches, which makes the volume really a handbook, rather than the larger, more usual, form which is so cumbersome.

Archives of Neurology and Psychopathology. Vol. II., Part 3, 4. Studies in Epilepsy. L. P. Clark, M.D.

Clark has presented a clinical study in epilepsy, practically composed of three distinct articles more or less correlated.

The first paper deals with the phenomena of exhaustion paralysis in epilepsy. The author's views are in greater part a confirmation of the existing theories upon the subject formulated by Jackson, Robertson, Todd and Gowers. Gowers has especially emphasized that paralytic states may be seen in epileptics without seizures preceding the phenomena, and has urged the theory of inhibition as an explanation for such paralyses, but Clark maintains that all paralytic states are preceded by cortical motor discharges and consequently are all post-paroxysmal exhaustion phenomena. It is a matter of some regret that careful pathological data on a few of the cases which this author has observed are not embodied in this section of his clinical studies and in this way render the subject much more complete.

The second paper of the study is upon paramyclonus associated with epilepsy, a rather rare phenomenon. This paper, aside from giving a review study of the cases already on record, is chiefly interesting because of the addition of a case by the writer showing ergograms, during the taking of which paroxysms of paramyclonus occurred. The handwriting of a paramyclonus case is well shown here.

The third paper treats of the rare occurrence of hypertrophic muscles and bones in paralyzed parts, seen in the cerebral palsies of infancy. The author reports two new cases occurring in his experience, one with athetosis and one without athetosis. The author seems to have proved that the present existing athetosis theory for the hypertrophy of paralyzed parts must be discarded.

Transaction of the Chicago Pathological Society, May, 1897, to June, 1899. Volume III. American Medical Association Press, Chicago, 1900.

This volume constitutes a really noteworthy contribution to American scientific medicine. The members of the Pathological Society of Chicago are evidently intent on sincerely aiding the progress of medicine in its modern development. The papers on the central nervous system, the ductless glands, the digestive system, and on the skin are especially worthy of preservation. The preliminary report on hepatic cirrhosis in the guinea-pig, produced by inoculation with a bacillus, is a very interesting timely contribution to an extremely important subject. The paper is by Dr. Weaver and in the discussion of it Dr. Hektoen said that Dr. Weaver's results are in a measure duplicated by a bacillus of the pseudodiphtheria group with which he has recently been experimenting. Two cases of blastomycetic dermatitis are reported. This affection has been passing unchallenged as lupus vulgaris. It is most interesting to note that Dr. Coates reports that in his case the lesions were clinically and histologically those of epithelioma.

The Anatomy of the Brain. A Text-Book for Medical Students. By Richard H. Whitehead, M.D., Professor of Anatomy in the University of North Carolina. Illustrated with Forty-one Engravings. F. A. Davis Company, Publishers, Philadelphia, New York, Chicago.

The subject matter is presented in this small and handy volume in four chapters. The Divis-

ions of the Encephalon, The Surface Anatomy of the Encephalon, the Internal Anatomy of the Encephalon and the Conducting Paths of the Encephalon. For those who desire a small book, with few well-digested and, for the most part, accurate statements bearing on the general anatomy of the brain, this book will be found serviceable. We would not think of using it while such standards as Gray, Morris and Gerrish are in use by every medical student.

The Ophthalmic Patient. A manual of Therapeutics and Nursing in Eye Disease. By Percy Fridenberg, M.D., Ophthalmic Surgeon to the Randall's Island and Infants' Hospitals; Assistant Surgeon, New York Eye and Ear Infirmary. New York: The Macmillan Co., 1900.

This is a clearly-written and agreeably-printed book on the care of eye patients. Beginning with the construction of eye wards, it takes up the subject of ophthalmic therapeutics, asepsis and antisepsis, arrangements for operations, and bandaging and after-treatment. It will prove valuable to the nurse and the house-surgeon and may be read with interest by the older practitioner, since it treats in detail of many neglected minor points which, being taken for granted by authors, are commonly omitted from the ordinary text-books on ophthalmology.

International Clinics. A Quarterly of Clinical Lecturers in Medicine and Surgery. Edited by Henry W. Cattell, A.M., M.D., Philadelphia. J. B. Lippincott Company, Philadelphia, 1900.

The present volume of the "International Clinics" appears under new editorial management. Certain very noticeable changes have been made in the book. The first fifty pages are given up to what may be called military medicine. Dr. Flexner treats of medical conditions existing in the Philippines. Dr. Louis F. Atlee gives the experiences of a naval surgeon in the Philippines. Dr. Henry Lamotte discusses camp management. Dr. Victor C. Vaughan treats of typhoid fever at Chickamauga in 1898. All of these articles are extremely interesting, but scarcely seem to deserve a place in a magazine devoted to clinical medicine and supposed to be practically helpful to the general practitioner.

The Section on Therapeutics contains some excellent articles. Those on the therapeutics of cacodylic acid and its derivatives by Professor Armand Gautier and on the treatment of carbuncle by Dr. Reynier are especially suggestive.

Other distinguished contributors to this volume are Professors Brieger and Lassar of Berlin, Professor Dieulafoy of Paris and Professors Wilson and Morton of Philadelphia. The article by Dr. James Clifton Edgar on obstetrical prophylaxis and gynecology appeared in the Medical News some months ago and was illustrated by several plates which we miss from this reprint.

The last one hundred and fifteen pages of this volume are taken up with a review of the progress of medicine during the year 1899 by the editor himself and Dr. N. J. Blackwood. This part of the volume is excellently written. In fact, it proves such interesting reading that one is tempted to think there must be room for a brief yearly review like this, but when we consider that to so important a subject as the whole of medicine only thirty pages can be given, while the review of surgery for a whole year has to be crowded into fifteen, we realize how superficial must be the treatment of the various topics. Much longer works are handicapped by the necessity for compression. We can scarcely hope, then, that these hundred pages of a review of the entire field of the medical sciences will prove a useful addition to medical literature.

The Surgical Diseases of the Genito-Urinary Tract. Venereal and Sexual Diseases. A Text-Book for Students and Practitioners. By G. Frank Lydston, M.D. The F. A. Davis Company, Publishers. Philadelphia, New York and Chicago.

One of the interesting features of this work is the personal element which is apparent almost from cover to cover. The author's opinions, mostly substantiated by the majority of present-day observers, at times most charmingly fallacious, are expressed with a didactic clearness, which is lacking in many of our compilations of note. There is a general easy conversational style throughout the book, which renders it agreeable and withal profitable reading.

The book is ample in proportions and discusses most of the diseases and disorders that are common to the genito-urinary tract, laying especial emphasis on the surgical modes of treatment. The author's discussion of stricture is especially complete, as are also the chapters on syphilis. The section on sexual disorders is well presented, although this is hardly up to the standard of other parts of the book, especially from a bibliographical point of view, the subject of hermaphroditism being treated largely after the "straw man" order. Diseases of the bladder and kidneys are considered in full.

The practical note is struck throughout and there are many suggestions that will prove of much value in the treatment of all diseases of this portion of the human anatomy, for in a sense the title is misleading. The publishers are to be congratulated on getting up a book which is much above their usual standard, when judged from a purely mechanical point of view.

For Chronic Prostatitis.—

℞ Ichthyol .....3ii—3v
Ol. theobrom.....3iss.

M. Ft. Suppos. No. xxiv. Sig. Insert one suppository into the rectum in the morning after stool and in the evening. If defecation occur a second time, use another suppository. The symptoms of painful defecation, sense of weight and disturbances of micturition will be favorably affected as the prostate decreases in size and induration.—*A. Freudenburg.*

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

VACCINATION ERUPTIONS.

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THE introduction of heterogeneous substances into the human organism is occasionally followed by a cutaneous outbreak. Thus there are rashes following antitoxin injections, dermatitis medicamentosa due to the ingestion of drugs, eruptions occurring after the administration of enemata (erythema enematogenes, so-called), and skin lesions following the subcutaneous or intravenous infusion of physiological saline solution. Therefore, it is not a matter of surprise to find the different dermatological lesions resulting from the inoculation of the vaccine virus, and it is to these, based upon a study of some eighty cases, that I desire especially to call attention.

At the outset, a distinction must be drawn between those eruptions in which it may be reasonably assumed that the course of the vaccination has been instrumental in their production and development, and those which are simply incidental and which would in all likelihood have occurred without the inoculation of the virus. In other words, we must not confound eruptions due to inoculation pure and simple with those produced by extraneous infection, impetigo, contagiosa, erysipelas, abscess, furunculosis, etc.

I should reluctantly attribute any generalized eruption to vaccination, once the seat of inoculation has become thoroughly healed. However, as long as the local sore remains open, as long as there is a chance for absorption, generalized vaccinal rashes may occur. Under ordinary circumstances the site of vaccination is thoroughly healed in from three to five weeks, so that after this period eruptions are uncommon, although in some cases they may appear from forty to fifty-six days after the primary inoculation.

The post-vaccinal lesions are characterized by their multiformity, embracing as they do all types from the erythematous to the bullous and hemorrhagic. Why a local inoculation in one instance should produce an erythematous urticarial or morbilliform eruption and in another a vesicular, pustular, bullous, or hemorrhagic, must be explained, I believe, upon the basis of individual peculiarity and the resistance with which the tissue-cells of different organisms meet the offending ingredient. In addition, this polymorphism may be explained as dependent upon the quality and quantity of the virus introduced, the amount and rapidity of its absorption, and the length of time during which it acts. A case presenting a papular eruption might, if the absorption of virus continued, pass through the stages of vesiculation and pustulation, and a multiform erythema might become hemorrhagic or a vesicular eruption become bullous in character.

It is my intention in this paper to deal mainly with generalized vaccination eruptions and merely to touch upon the complications and sequelæ of vaccination. The children showing generalized eruptions were vaccinated at the Good Samaritan Dispensary with the ivory points of the New England Vaccine Company. From a close observation of the patients it was found that the eruption generally appeared between the ninth and fourteenth days, most frequently on the tenth or twelfth day after the vaccination. In some instances it occurred as early as the fifth day, in others as late as five weeks. In the latter class only such cases are included as showed the remains of vaccination. It did not always follow that the seat of inoculation was "bad;" on the contrary, in some very extensive eruptions the local sore was typically normal in appearance. This fact does not seem so strange, on second thought, since the force of the virus in deep, indolent ulcerations appears to be exerted on the surface, pouring its product into the local site and thus diminishing the amount absorbed into the general system. Among the types of generalized eruptions the following were recorded: Erythematous urticarial, papular, vesicular, pustular, erythema multiforme, morbilliform, bullous or pemphigoid and scarlatiniform.

In presenting this subject an endeavor has been made to collect for statistical purposes the proportion of generalized eruptions in a given series of vaccinations; that is, in a series of sufficient abnormality as to necessitate the advice of a physician; for it must be remembered that only when some complication or sequela, as, for example, an eruption, presented itself did the mothers seek our aid. For this purpose the records of Dr. Chas. W. Allen's Dermatological Clinic (Good Samaritan Dispensary) for the months of May, June, July, August and September of the years 1897, 1898 and 1899, have been collected with the following results: In 1897, 291 vaccinations were recorded with 34 generalized eruptions; in 1898, 166 with 21, and in 1899, 126 with 18; roughly speaking, fourteen per cent. (80 out of 583) of the children presented were subjects of generalized vaccinal eruptions. The report of the Dispensary shows that from May,

1897, to October, 1899, 4160 children were vaccinated; of these 583, or fourteen per cent., presented complications or sequelæ and 80 or about two per cent. generalized eruptions.

Fig. 1.

Urticarial Type. Autoinoculation to the Left.

At this juncture a word on autoinoculation and heteroinoculation may not be amiss. The most usual situation for autoinoculation is an inch or two above or below the original site of vaccination. It may occur to the right or the left of the original sore (Fig. 1), or, indeed, on any other portion of the body. In two instances "typical vaccinia was implanted upon a post-auricular eczema and ran the same course as upon the arm" (Allen). This condition is usually accidental and is caused by the child scratching and conveying the virus to some other slightly-denuded portion.

A case of more than passing interest occurred in the ophthalmological service of Dr. Wm. Cowen. The history in brief is that on May 15, 1899, a child was vaccinated at the Dispensary with a successful result; two weeks later the mother noticed a "pimple" on her right lower lid, at the outer margin of the punctum lachrymale; this grew larger, became a "blister," as she said, then "yellow matter," in short, went through all the stages of papulation, vesiculation and pustulation with the formation of a small scar. Dr. Cowen states that when he first saw the patient the lid was edematous, infiltrated and the eye closed, with enlargement of the pre-auricular gland on that side, although the cornea remained intact throughout. When last seen the patient suffered from mild epiphora as a result of partial closure of the punctum. In explanation of this circumstance, there is every probability that the child while nursing carried its fingers charged with the virus to the mother's lid and thus produced the local sore; or the mother may herself have been the carrier of the infection.

The most common generalized eruption was found to be urticaria in its varying types, occurring from the fifth to the fifteenth day, usually on the ninth or tenth. Some instances showed typical wheals of various sizes, others papules, others papulo-vesicles and others bullæ; in a few instances the smaller wheals had in their center a minute vesicle, rendering differentiation from varicella necessary. This urticaria, while often generalized, was at times localized to the vaccinated arm, or at most a few lesions were scattered over the body. It was not uncommon to find the lesions of urticaria combined with contagious impetigo, the latter being due to secondary infection from scratching. Urticarial lesions occasionally occurred as early as three or four days after inoculation; these are instances of true reflex action similar to that produced by shellfish, strawberries, etc.

Fig. 2.

Bullous or Pemphigoid Type.

The morbilliform type, though not very frequent, occurred in several instances, usually ten to eleven days after vaccination. In these cases there were no prodromal symptoms, no coryza or

conjunctivitis, and the temperature never rose above 100.5° F. *per rectum*. The eruption, while fairly typical of measles in appearance and distribution, was differentiated by the history of sudden onset, the early disappearance of the rash without desquamation (within forty-eight hours) and the absence of Koplik's phenomenon.

In three instances, I observed the appearance nine days after vaccination of an eruption similar to German measles or rötheln, but differentiation from rubella was not so easy. In fact, in the absence of any particular diagnostic sign, I was unable to satisfy myself as to the positive diagnosis, since in both types the onset is sudden, the fever slight, and the eruption disappears in forty-eight hours. If other children in the same family have been or become affected a diagnosis of rubella should of course be made.

The vesicular eruptions proved interesting as well as puzzling. They occurred, as a rule, eleven to fifteen days after vaccination. In some instances the trunk was mainly involved; in others the extremities seemed to bear the brunt of the outbreak; a very small number presented a vesiculation limited to the vaccinated arm. A few instances showed generalized vesiculation even to involvement of the oral mucous membrane. Some of the cases simulated chicken-pox so closely that Dr. Allen classified them as of the "varicella type." When examined carefully, however, it will be seen that these cases never have *all* the characteristics of varicella; the lesions do not come out in stages, they lack grouping in twos, threes, or fours, the mucous membrane of the mouth is usually not involved, and the vesicular contents are darker and not lactescent.

On the other hand, the fact must not be overlooked that varicella might occur during the course of vaccination and confuse the diagnosis. Vaccination, we know, while protecting altogether or in part against variola, is no safeguard against varicella, thus demonstrating the distinctiveness of the two diseases. Varicella may appear twelve to fourteen days after vaccination, just at the time when lesions simulating it are wont to occur. If attention is given to the grouping, the crops, the various stages of the lesions, the character of the vesicular contents, and the oral mucous membrane, no great difficulty will be experienced in reaching a proper diagnosis. In two extremely doubtful instances, I was able to demonstrate, two days later, the occurrence of chicken-pox in other members of the family.

Generalized scarlatiniform eruptions were rather infrequent, only four instances being recorded. One of the children seemed very ill, with a temperature of 102.5° F. and an eruption involving the face and extending over the lips into the mouth; in twenty-four hours it had entirely disappeared from the body and, in greater part, from the face. In a second case, the eruption was, to use the words of Dr. Allen, "more scarlet than in scarlet fever."

This form of generalized eruption appears about ten to eleven days after vaccination, is unaccompanied by vomiting or pharyngeal inflammation, and subsides in from twenty-four to forty-eight hours without desquamation. Simple erythema or roseola vaccination rash was observed a number of times; it is a mild form of congestion, disappearing in twenty-four hours.

Pustule-bullous lesions were several times entered on the records. One patient had a temperature of 103.5° F.; another showed large bullæ on the soles of the feet, on the hands, and scattered vesico-pustules on the body. A thin case of bullous or pemphigoid vaccinia presented bullæ over the entire body, many of them being infected and impetigenous. Three distinct bullæ existed over the posterior surface of the left leg (Fig. 2); some had tense, others flabby walls, the contents in all being alkaline in reaction. The bullous form of vaccinia might be confounded

Fig. 3.

Erythema Multiforme (Exudativum Annulare).

with syphilis, from which it must be differentiated to a great extent by the history. As Allen says, "If it comes between the ninth and fifteenth day—usually tenth or twelfth—we naturally may exclude inoculation syphilis, which would produce such manifestations only after a lapse of almost as many weeks." The bullous syphilide is a disease of very early life (first six weeks) and is usually fatal.

Other cases suggested echthyma with greenish blebs on an erythematous base. Erythema multiforme was recorded a number of times; one of the cases was hemorrhagic and differentiation from purpura was only rendered possible by the existence of other multiform lesions which faded away on pressure. A second instance presented

FIG. 4.

Vesiculo-bullous Urticaria.

ten days after vaccination a typical erythema exudativum annulare, mainly on the anterior surface of the chest, abdomen and back (Fig. 3).

Before closing the subject of generalized vaccination rashes, mention must be made of conjoined eruptions; we have seen in the same patient, erythema and papulo-vesicles, scarlatiniform erythema and minute vesicles, urticaria and erythema multiforme. Finally, as sequelæ of vaccination we have enumerated axillary adenitis, 5; axillary abscess, 6; erysipelas, 13; pseudo-erysipelas (Allen), 7; exuberant granulations, 4; slough, 7; deep ulceration, 67; hemorrhagic pock (traumatism), 3; hypertrophic scar, 2; marked induration, 4; raspberry growth (dry exuberance granulation tissue), 2.

1828 Madison Avenue.

CHRONIC ENTERITIS AND TUBERCULOUS ENTERITIS TREATED WITH HYPODERMIC INJECTIONS OF ARSENIC.[1]

By LOUIS KOLIPINSKI, M.D.,
OF WASHINGTON, D. C.

THE essential symptom of chronic enteritis is found in the alvine evacuations, their composition, frequency and time of occurrence. Rare cases are encountered in which the bowels are normal or constipated, yet sooner or later they offer the usual phenomenon.

The composition presents the characters of fluid, semisolid, rarely formed, grey, white or brown-yellow in color; odorless or putrid, containing intestinal mucus, fragments of undigested food, and often show by evolution of gases, processes of fermentation or putrifaction; not often is blood or blood-clot discovered. The frequency is three or more movements daily. The time of occurrence is characteristic: (1) From midnight until morning, awakening the patient from his sleep or compelling him to seek the toilet-room on arising from his bed. This performance we may call the early morning movement of the bowels. It is so peculiar that it alone may sometimes be sufficient for a diagnosis. (2) A strong and irresistible desire for stool immediately after meals, or it may force the patient to leave the table before his repast is finished; or again, in the severest type, the desire returns whenever food or drink of any description is swallowed. The diarrhea may be preceded or associated with pain in the intestines; oftener, however, it is painless. The amount of the dejections may be copious, rarely scant, usually moderate. Of the constitutional symptoms, the result of chronic enteritis, the most constant and striking are: Anemia, which is apparent on inspection, and loss of weight, always considerable and ranging from ten to one hundred pounds.

The pathologic anatomy recognizes: (1) A hyperplastic inflammation of the mucous membrane. (2) An atrophic form. (3) Ulceration of the mucosa may coexist. To identify these lesions by clinical symptoms is often impossible. Intestinal ulcer may be latent and insidious and an autopsy disclose its presence as the cause of a fatal hemorrhage or peritonitis.

The most important complication and sequel of chronic intestinal catarrh is tuberculosis. Chronic enteritis is often found in those of consumptive habit and in the stage of pretuberculous anemia. The emaciation in these cases is always marked even when the chronic diarrhea has not long existed or has not been severe. An historical example of tuberculosis following chronic enteritis is illustrated in the case of General Andrew Jackson, the hero of New Orleans.[2] In children, the victims of this disease of long standing, there occurs an arrest of growth and

[1] Read before the Therapeutic Society of the District of Columbia, March 10, 1900.

[2] *Vide* the biography by James Parton.

development. The figure of these patients is markedly stunted. The evolution of puberty may be retarded. A youth of eighteen or twenty years may have the general appearance of a boy of twelve or fourteen. The voice may retain its childish intonation and the growth of hair on the face not appear or be but scant. Treatment, that cures the chronic enteritis in time, causes rapid increase in weight, in growth and in the general physical attributes of manhood. Tuberculous enteritis is recognized by the evidences of tuberculous deposits in other parts of the body, particularly in the lungs; by the daily presence of fever; by the enormous wasting of the body, and by the behavior of the diarrheal movement absolutely uncontrolled.

The prognosis of chronic enteritis, without treatment, is unfavorable. There is no tendency to spontaneous cure. Its duration may extend over half a life-time. One still encounters the disease in survivors of the War of the Rebellion, who contracted it as "swamp" or "camp diarrhea." With the destruction of the glandular structures of the intestinal mucous membrane, the general symptoms become graver and favor a sudden and malignant exacerbation of the diarrhea, resisting all efforts at control, or, from age and profound exhaustion, the patient finally succumbs. Of course, all along, he likewise falls an easy victim to intercurrent diseases. A prognosis, when reinforced with judicious treatment, is favorable and is not influenced by long duration or extreme debility. Satisfactory results can be accomplished in the aged and recovery may yet ensue in a case apparently hopeless. Nature alone is helpless, art powerful.

In the clinical testing of dog and of ox serums, containing arsenic in cases of pulmonary consumption by my friend Dr. Arthur J. Hall and myself, it was observed that the diarrhea was checked in both the chronic and tuberculous varieties. Other marked and permanent effects on the disease or any of its other symptoms, particularly on the fever, we failed to recognize and the experiments were consequently abandoned. We found that serum containing one sixty-fourth of a grain of sodium arsenite or one one-hundredth of a grain of arsenious acid to thirty minims was not stabile in hot weather. When fresh and sterile it gave no reaction and was well borne, excepting the inconvenience of a painful nodule at the site of puncture, which disappeared in a few days. Frequently from want of permanency in the preparation constitutional disturbance resulted. In a few hours, a chill, a sleepless night, and fever for a day or two. A phlegmon-like induration of long duration was also apt to develop, disappearing finally or forming an abscess.

In place of serum as a menstruum for arsenic the writer has since chosen normal salt solution (0.5 per cent. sodium chloride). This can be declared practically painless and patients readily submit to its use. The dose of arsenic, of which sodium arsenite is the best and most eligible combination for this purpose, is from one-sixty-fourth to one-thirty-second of a grain of the salt in sixty minims of the fluid. A larger amount has not been found necessary.

In the administration of arsenic subcutaneously for the cure of chronic enteritis, the injections may be practised once a week, in mild and convalescent cases; bi-weekly in the average, and every day or two in the severe and bedridden. Circumstance, time and convenience may all be considered. It is a treatment both simple and economic. Other medication is not necessary, unless it be an occasional prescription for the relief of some special symptom incident to a particular case. The treatment should be continued for from seven to fourteen days, and if decided results are not obtained at the end of that time it should be abandoned as futile. In the majority of cases, however, success will speedily appear and the injections are discontinued at the end of thirty to sixty days from their beginning. The most convenient points for injecting are the supra-, inter- and infrascapular regions, and especially the lateral gluteal region about the great trochanter of the femur.

As for food, its abuses and misuses play the most important rôle in the causation and prolongation of the disease, and as a rigid diet is a *sine quâ non* for success, it is proper to restrict the patient while under this treatment. We must allow the diseased intestine repose while the processes of repair and healing proceed. However, it will not be found necessary, except in severe forms, to reduce the variety of food stuffs to a minimum, as is usually recommended and practised, but it can be made much more liberal as in the following scheme: Allow milk, cocoa, chocolate, tea and coffee, white bread, cream or soda crackers, butter, eggs, meats of all sort excepting pork and its preparations, fish, game, fowl, cooked vegetables and carbohydrates, Irish potatoes, rice, farina, sago, arrowroot, tapioca, Lima beans, lettuce, cauliflower, spinach, beets and turnips.

To be interdicted in a general way are all articles of dessert excepting olives, almonds and cheese; particularly excluding fruit and preserves, but allowing watermelon. A favorable result is in all instances most certain to be attained by an exclusive diet of milk and cocoa for a week or more. At times it may be necessary to have some substitute even for milk when this is found to disagree from individual peculiarity.

It is not claimed that this is the best treatment for chronic enteritis. The therapeutic actions of arsenic are often brilliant, but, with the exception of its effect on chorea, are at times variable and unsuccessful. Its usefulness in chronic enteritis is not always certain. In the colliquative diarrhea of amyloid degeneration, the writer has not had opportunity to try the remedy; in a case of chronic diarrhea due to chronic myocarditis as primary cause he met with failure. He has had some non-successes with patients

treated by hypodermic injection. Occasionally the lack of confidence or prejudice of the sick may have been underlying causes. Considering, however, his experience as a whole the conclusions seem to him substantiated that:

1. The arsenical injection is safe, painless and effective.

2. The dose is very small. From one-sixty-fourth to one-thirty-second of a grain of sodium arsenite is sufficient.

3. One, two or three injections per week will cure the milder cases.

4. Other internal medication is avoided and the patient has no daily routine of dosing.

5. Greater latitude in diet can be allowed without detriment.

Selected Cases.

Tubercular Enteritis.—A carpenter, twenty-six years of age, was seized with acute disease, apparently a pleuropneumonia. He did not regain his health. Six months later on examination he was found to be in the fourth stage of pulmonary consumption. The upper half of the right lung was one enormous cavity. His expectoration was purulent and very profuse. He had a high and continued fever. His body was greatly emaciated. There was swelling of the feet and lower half of the legs. Cough, speaking, or the least exertion caused dyspnea. For two months he had suffered from a diarrhea which no treatment could check. The movements of the bowels were very frequent. His inability to take food was hastening the end through starvation. A diet of meats, milk and cocoa was instituted and he was given a daily injection of one-sixty-fourth of a grain of sodium arsenite in ox serum. After the fourth injection the diarrhea ceased. For a week there was improvement in strength and he was able to sleep at night with some comfort. The cough diminished; the expectoration decreased to a marked degree. The injections were continued but at intervals of two and three days. The bowels remained normal or constipated. Tuberculous ulceration of the mucous membrane of the mouth and of the tongue caused much suffering. Death occurred in about four weeks from exhaustion.

Tubercular Bronchitis; Arthritis Deformans; Chronic Enteritis with Ulceration.—A woman of sixty-five years who had a chronic cough, was seized with a mild acute attack of arthritis deformans of both knee-joints. At the same time a chronic diarrhea began. The enteritis was treated by dieting and by drugs in great variety, without any beneficial result. A low daily fever was observed, the temperature ranging from 98.8° to 101° F. There was not any improvement in her condition for five months. The fever did not vary during this time. Repeated examinations of the sputum always revealed the presence of tubercle bacilli. The bowels moved more frequently after midnight and in the morning, averaging six daily evacuations. They were offensive, thin and brown. Mucus and blood were noticed either in admixture or in small clots. At the end of the time just stated her body was wasted to a very great degree. The skin was of a brown-yellow color, very dry and shriveled. She was given seven consecutive daily injections of arsenical serum. This treatment was then suspended because of the development of a large painful induration resulting from one of the punctures. An erythema appeared on the trunk. The fever disappeared and was supplanted by a subnormal temperature which continued for weeks. The diarrhea was arrested with the use of the seventh injection. She made a rapid recovery and declared that the very first hypodermic injection had helped her. She was unable, however, for some time to extend her lower limbs on account of fibrous ankylosis of the knee-joints, due partly to the arthritis and partly to the helpless state in which she had lain for months.

Chronic Enteritis; Tubercular Bronchitis.—A clerk, about sixty years of age, had a chronic enteritis for three months which had not been relieved by treatment. The patient had a slight cough and some little expectoration. Four weeks later he had grown generally worse and his weakness and loss of flesh pronounced. As no progress had been made in the case he was induced to remain in bed and follow, with system and regularity, certain methods of dieting and the use of drugs for five weeks. His condition had then changed for the worse. There was a daily low fever and the diarrhea remained unchecked. The movements were both frequent and copious. They were offensive, mushy in consistency and fermenting. Tubercle bacilli were invariably found in the sputum. The patient was extremely dissatisfied and irritable. He seemed to derive a gloomy solace from the frequent use of his clinical thermometer. As a last resort the arsenical injections were recommended and used but much against the patient's opinion. Improvement in the diarrhea followed the first administration. It was repeated every second day for three weeks. The fever began to vary from 98.8° to 99° F. in the afternoon and evening and a subnormal temperature prevailed in the morning hours. Convalescence was slow and interrupted by a short relapse in one instance of the diarrhea and another time by an attack of influenza. The patient was restored to health and able to resume his clerical work after a sickness of about eight months.

Chronic Enteritis.—A printer, forty-six years of age. Had had chronic diarrhea since March, 1899. After eating or drinking he would be seized with colicky pains which were speedily followed by a diarrheic movement. He usually had from three to six evacuations daily. After taking opiates or intestinal astringent he would be constipated for one or two days. This caused him further distress in the "lower bowel," and induced him to use a soap-suds enema, after which the diarrhea would return and this was his round of existence. There was much loss of

weight and strength. Just before beginning the treatment his malady had become suddenly intensified from taking cold so that he had fifteen stools in thirty-six hours.

In the following summary of the course and result the time stated indicates when the bowels moved:

January 14, 1900; sodium arsenite, grain 1-32, hypodermically; January 15th, 1.45 P. M., pain before—light—natural; 8 P. M., pain before movement, then took opiate; January 16th, no movement, arsenical injection; January 17th, 7 A. M., soap-suds enema; January 18th, 7 A. M., arsenical injection; January 19th, no movement; January 20th, 5 A. M., arsenical injection; 7.30 A. M.; January 21st, 7 A. M.; January 21st, 9 A. M.; January 22d, no movement; January 23d, 7.30 A. M., enema, arsenical injection; January 24th, 4 A. M., 7. A. M., 9 A. M.; January 25th, no movement; January 26th, no movement; January 27th, 7 A. M., used enema; January 28th, 11 A. M., used enema; January 29th, no movement, arsenical injection; January 30th, 7 A. M., an enema of one pint of olive oil; January 31st, 6 A. M.; February 1st, 6 A. M.; February 2d, 8.30 A. M., arsenical injection; February 3d, 9.30 A. M.; February 4th, 9 A. M.; February 5th, 8 A. M.; February 6th, 9 A. M.; February 7th, 9 A. M., arsenical injection; February 8th, 8.30 A. M.; February 9th, 7 A. M.; February 10th, 7 A. M.; February 11th, 9 A. M.; February 12th, 5.30 A. M.; February 13th, 9 A. M.; February 14th, 9.30 A. M., arsenical injection.

The patient remained at his daily work. The diet was liberal, dessert only being excluded. In thirty-two days he was given nine arsenical injections. He received no other medicinal treatment and had gained eight pounds in weight.

Chronic Enteritis; Pulmonary Tuberculosis.—P.—. twenty-eight years old, has one child two years old. Sickness began June, 1899, with a chronic cough, continued fever, considerable wasting. On two different occasions attempted to take creosote with the result, as she declared, of producing the chronic diarrhea from which she has since suffered. She has from two to four thin movements daily; the first invariably before breakfast, the others after her other meals. These are preceded by griping pains. Tubercle bacilli in sputum.

The following daily record of the movements of the bowels covers a space of two months. During this time the feces were normal in composition. The patient considered herself well at the end of the second week. In this case the diet was not restricted:

December 25, 1899, 8.45 A. M., sodium arsenite, gr. 1-64; December 26th, 9.15 A. M.; 12.15 P. M.; December 27th, 9.20 A. M., sodium arsenite, gr. 1-32; 10.37 A. M.; December 28th, 8.45 A. M.; December 29th, 9.50 A. M., 11.20 A. M.; December 30th, 10 A. M., 12.30 P. M.; December 31st, 9.20 A. M.

January 1, 1900, 9.15 A. M., sodium arsenite, gr. 1-32; January 2d, 9.35 A.M., 9.45 P.M.; January 3d, 9.45 A. M.; January 4th, 8 A. M., sodium arsenite, gr. 1-32; January 5th, 9.20 A. M., 12 M.; January 6th, 9.10 A. M., 12 M., 2 P. M.; January 7th, 10.10 A. M.; January 8th, 9.30 A. M., 11.55 A. M.; January 9th, 9 A. M., 11 A. M., 12.30 P. M., 8.10 P. M.; January 10th, 9.30 A. M., arsenite of sodium, gr. 1-32; January 11th, 11.45 A. M.; January 12th, 8 A. M., 10.30 A. M.; January 13th, 10.10 A. M.; January 14th, 9.40 A. M.; January 15th, 8.45 A. M., sodium arsenite, gr. 1-32; 11.50 A. M., 9.15 P. M.; January 16th, 9.20 A. M.; January 17th, 10.30 A. M.; January 18th, 11.40 A. M.; January 19th, 10.40 P. M., sodium arsenote, gr. 1-32; January 20th, 11.45 A. M.; January 21st, 6.35 P. M.; January 22d, 8 A. M., 9 P. M.; January 23d, 9.35 A. M., 10 P. M.; January 24th, 12.25 P. M., sodium arsenite, gr. 1-32; January 25th, 10.35 A. M.; January 26th, 11.25 A. M.; January 27th, 8.30 P. M.; January 28th, 12 M.; January 29th, 0 0.; January 30th, 7.40 A. M., 12.10 A. M., 2.50 P. M.; January 31st, 9.20 A. M., sodium arsenite, gr. 1-32; 9.45 A. M., sodium arsenite, gr. 1-32; February 1st, 9.10 A. M.; February 2d, 11.05 A. M.; February 3d, 0 0.; February 4th, 9.45 A. M., sodium arsenite, gr. 1-32; February 5th, 7.20 A. M., 10.20 A. M.; February 6th, 9.30 A. M.; February 7th, 7.30 A. M., sodium arsenite, gr. 1-32, 10.20 A. M.; February 8th, 8.50 A. M., 9.30 A. M., 1.55 P. M.; February 9th, 9.30 A. M., sodium arsenite, gr. 1-32; February 10th, 9.30 A. M.; February 11th, 0 0; February 12th, 6 P. M., sodium arsenite, gr. 1-32; February 13th, 7.20 A. M., 10.20 A. M.; February 14th, 3 P. M., 8 P. M.; February 15th, 8 A. M., 10.10 A. M.; February 16th, 10.20 A. M.; February 17th, 9 A. M.; February 18th, 0 0.; February 19th, 1.10 P. M.; February 20th, 1.05 P. M.; February 21st, 10.10 P. M.; February 22d, 9.40 A. M., sodium arsenite, gr. 1-32, 10.35 A. M.; February 23d, 6.10 P. M.; February 24th, 9 A.M.; February 25th, 0 0.; February 26th, 0 0.; sodium arsenite, gr. 1-32. Thus in this case sixteen arsenical injections were given in sixty-four days. The evacuations after the third hypodermic regained their normal consistency and color.

Tuberculosis Dorsal Vertebrae; Chronic Enteritis.—Married woman of thirty-five years. Has had Pott's disease of the spine for eight years; no abscesses; chronic enteritis for a year; two to three thin fetid movements of the bowels daily; they were of the early morning variety, and after eating. She was much emaciated, has been at times confined to her bed for months; has a chronic cough. Received fifteen arsenical injections at biweekly and weekly intervals; diet unrestricted. Diarrhea ceased after second hypodermic. General condition showed steady and great improvement; was enabled to pass her time in light home occupations. No relapse at the end of eight months.

Nervous Diarrhea.—A woman of thirty years, of marked neurotic temperament; mother of

three children. A year before her present sickness she suffered for three weeks from fancied epidemic cerebrospinal meningitis, one of her acquaintance having died of this disease. Has looseness of the bowels at each menstrual period. Her present attack of three weeks' duration. The evacuations were three or more daily and mostly in the early morning. There was much intestinal discomfort from the presence of gases. The movements were watery, odorless and brown in color. There was a frequent desire to stool which she fancied she was able to suppress. She had no wish for food. Complained much of throbbing of the arteries and of a heavy weight on the crown of her head. The heart beats were normal in frequency. She was very depressed and very apprehensive of some greater malady. She gave up all household cares and occupations. Was afraid to be alone and yet avoided her relatives and friends. Her nights were tormenting by unpleasant dreams and she awoke in the morning exhausted. She felt "miserable."

Notwithstanding the patient's theory that the diarrhea was the result of "nervousness," she was given seven injections of sodium arsenite, grain 1-32, in a week and a diet of milk, cocoa and beefsteak. Later on oysters, chicken, sweetbread, rice and potato were added. The immediate effect of the arsenic was to make her feel invigorated; after the third day of treatment the bowels moved only in the afternoon hours; after the fifth there was but one normal morning movement. No other medicines were administered except a hypnotic to produce sound sleep at night.

Chronic Enteritis.—A grocer, twenty years of age; the malady had existed two and a half years before receiving the treatment herein described. When his disease was quiescent, he had two or three movements a day; one in the early morning; the others during or immediately after his meals. They were thin and copious. Every few months the disturbances became intensified, six or more alvine discharges occurring each day. He grew weak, lost weight, strength and spirits and was compelled at such times to leave his business. At his first visit his malady had become thus aggravated. His feeling of debility had made him alarmed as to his condition. Notwithstanding this, in the first half of the treatment, his diet was not restricted. As the progress of the case was not satisfactory the patient was limited in his food, as it was obvious that that of which he had been allowed to partake was too irritating for a rapid curative result. It is to be noted that the young man's occupation required him to rise early so that towards the end of the subjoined record the daily single movement was normal, occurring after breakfast. The hypodermic injection used consisted of sodium arsenite, grain 1-32. The time records indicate the movement of the bowels. First day, weight 141 pounds, arsenic injection, 6.15 A. M., 6.45 A. M., 7.45 A. M., 12.35 P. M., 3 P. M., 4 P. M., 5.30 P. M., 6.40 P. M., 7.20 P. M., 8.30 P. M.; second day, 6.15 A. M., arsenic injection, 6.35 A. M., 6.50 A. M., 7.25 A. M., 8 A. M., 8.30 A. M., 9 A. M., 9.45 A. M., 10.40 A. M., 11.15 A. M., 12.10 P. M.; third day, 5 A. M., arsenic injection, 5.30 A. M., 6 A. M., 7.10 A. M., 9 A. M., 11.30 A. M., 3 P. M., 6.45 P. M.; fourth day, 6.30 P. M., 8.10 P. M., 4.30 A. M., 8.45 A. M.; fifth day, 5.30 A. M., arsenic injection, 8.40 A. M., 6 P. M., 7.15 P. M.; sixth day, 2.10 P. M., 9 P. M.; seventh day, 7.25 A. M., 9.10 A. M., 6.45 P. M., 10.55 P. M.; eighth day, 7 A. M., 2.10 P. M., 6.35 P. M.; ninth day, weight 142.5 pounds, arsenic injection, 12.50 P. M., 5 P. M.; tenth day, 6.30 A. M., 7.45 A. M., 10.05 A. M., 2 P. M., 5.30 P. M.; eleventh day, 6.55 A. M., 8.40 A. M., 12.20 P. M., 1.35 P. M., 5.40 P. M., 7.10 P. M.; twelfth day, 6.30 A. M., 9 A. M., 12.45 P. M., 7.05 P. M.; thirteenth day, 6.05 A. M., 6.35 A. M., 10.10 A. M., 4.40 P. M., 8.45 P. M., 10.15 P. M.; fourteenth day, 7.30 A. M., 9 A. M., 7 P. M.; fifteenth day, 6.45 A. M., arsenic injection, 9.05 A. M., 11.55 A. M., 6.25 P. M. Diet: Milk, cocoa, beefsteak, lamb and mutton chops, chicken, eggs, shad, mackerel, Irish potatoes, rice, spinach, white bread, cream crackers, butter. Sixteenth day, 9.45 A. M., 2.30 P. M.; seventeenth day, weight 145 pounds, arsenic injection, 0 o.; eighteenth day, 7.05 A. M.; nineteenth day, 7.05 A. M.; twentieth day, 9.45 A. M.; twenty-first day, weight 146 pounds, arsenic injection, 6.30 A. M., 9.05 A. M.; twenty-second day, 5.30 P. M.; twenty-third day, 10.40 A. M.; twenty-fourth day, 6.45 A. M.; twenty-fifth day, 7.30 A. M.

A cure in twenty-five days; patient arose early, was busy all day; gain in weight five pounds. Eight arsenical injections given.

ANASTOMOSIS OF URETERS WITH INTESTINE.[1]

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The experimental work forming the basis of this article was undertaken with the view of studying the changes resulting from anastomosing the ureter with the intestinal tract and of determining whether the procedure could with safety be employed in human beings. The important and far-reaching changes in the kidneys and ureters resulting from a bacterial invasion from the septic cavity into which the ureteral orifices open have not been satisfactory studied. The question will always arise whether infection of the kidney will invariably follow the ureteral union with the intestine. If this be true, can perfection of operative technic reduce this infection to a minimum, so that the kidney can recover and remain a useful organ? These questions must be answered before the surgeon will subject his patient to an operation from which, once performed, there is no retreat.

The first portion of the article has been devoted to an exhaustive review of the literature of the subject. The second part has been given

[1] Author's Abstract.

over to the description of the author's own experiment from which, together with the work of others, general conclusions have been drawn.

Perhaps the most striking fact revealed by a study of the experimental work which has been done in uretero-intestinal anastomosis is the exceptional high mortality accompanying the operation, whether one or both ureters are implanted in the bowel. Out of 60 dogs operated on by various experimenters in which one ureter was implanted into the intestine, there were 35 recoveries or 61 per cent. mortality, while out of 65 dogs undergoing bilateral ureteral anastomosis only 8 survived, giving a mortality of 87 per cent. The causes of death were various, but in a general way it may be said that the majority resulted from peritonitis through the giving way of the ureterorectal stitches and the subsequent escape of urine into the peritoneal cavity, or to an overwhelming infection of the kidney ascribed to nephritis or uremia.

A careful review of the different operative procedures shows that the primary mortality was large by all methods. The method which calls for the least amount of suturing of the ureter itself will be found to give the best results. The post-mortem on the animals surviving the operation for any length of time in nearly all instances showed unmistakable evidence of stenosis of the ureteral orifice, hydro-ureter, hydronephrosis and pyelonephritis. In no case was it demonstrated beyond dispute that the kidney was normal after the corresponding ureter has been implanted into the rectum.

A critical survey of 28 uretero-intestinal implantations in man shows the primary mortality, 32 per cent., to be exceedingly high. If to this be added the uncertainty as to subsequent renal infection in the cases surviving the operation, it must be admitted that uretero-intestinal anastomosis is not an operation of choice. The subsequent history of the successful cases places the operation in a still more unfavorable light. Of the 19 recovering, 2 died later of pyelonephritis and 2 of uremia after implantation of the second ureter. The post-mortem in one of these revealed a fibrous condition of the kidney, the ureter of which had been implanted fourteen months before. An autopsy was not secured in the second case, but, from the similarity of symptoms, it is fair to assume that the pathologic conditions were the same as in the first case. Of the 4 surviving cases with implantation of one ureter, 1 is living and well at the end of eight years, but it is not stated that the discharges from the rectum contain urine. Renal infection was responsible for death in each of the 9 fatal cases.

In 1894 Maydl reported 2 cases of exstrophy of the bladder operated on by an original method, consisting of the implantation of the vesical trigonum with its ureteral orifices into the sigmoid flexure. The predominant idea of this operation was the preservation intact of the ureteral orifices and their utilization as a means of preventing an ascending renal infection.

In order to ascertain whether this theory is borne out by clinical fact, the author has collected and tabulated 36 cases of operations performed according to this technic. Of the 36 cases, 5 died as a result of the operation and 2 died four and fifteen months later, respectively, of pyelitis. This operative mortality is surprisingly low for such a difficult major operation. Thirty-three of the operations were done for the relief of exstrophy of the bladder, there being 26 males and 5 females. The sphincteric control over the urine is reported as remarkably good, it being noted as poor in only one case. There were six fistulæ following the operation, all noted as subsequently closing.

The primary and secondary results of ureterotrigono-intestinal anastomosis are so much superior to those of ureteral implantation without the preservation of the vesical ureteral orifices as to always demand the performance of the first operation in preference to the latter.

A summary of 9 cases of uretero-intestinal anastomosis through the formation of rectal fistulæ shows that 6 of these were for exstrophy of the bladder with a mortality of 67 per cent.; 2 vesical vaginal fistulæ were both cured and there were 2 cases of vesicovaginal rectal fistulæ.

Frank's experiments have shown that in dogs vesical rectal anastomosis is a comparatively safe procedure; that the bladder remains free of feces and that infection of the kidneys does not result in some of the cases operated upon.

The author's experimental work covered a period of eighteen months. The bacteriologic and microscopic work was conducted by Dr. F. Robert Zeit of the Post-Graduate Medical School. Dogs were used for all experiments and the most aseptic technic was employed. Three series of experiments were conducted as follows:

Series 1.—Bilateral uretero-intestinal anastomosis; both ureters were implanted simultaneously in the rectum in 28 dogs with 5 recoveries and 23 deaths. Various forms of operation were employed. The most common being an incision made in the bowel-wall through the serous and muscular coats, the ureters being implanted in the rectum through small incisions made in the mucosa; they were held in place by sutures passing through the mucosa and their outer coats of peritoneal covering. The closure of the incision by Lembert's sutures completed the operation. In most of the cases death ensued from general peritonitis accompanied by extravasation of urine into the peritoneal cavity. This escape of urine in most instances arose from the slough at the site of the anastomosis. The ureters were, as a rule, dilated although the ureteral orifices were patent.

In the 5 dogs which recovered, the operative results may be termed fairly good. In only 1 case was a single ureter thought not to be patent. In four of the cases, however, the ureters are noted as being dilated. In 1 there was pyo-

ureter, in another hydro-ureter. Three of the cases died of pyemia, secondary infection and endocarditis, forty, eighty-four and thirty-nine days respectively after operation. In one dog living thirteen months after the operation, there had been a recovery from the infection with resulting contracted kidney.

Series II.—Lateral uretero-intestinal anastomosis; 16 dogs operated upon with 3 recoveries; 12 died of general peritonitis due to leakage through stitch-holes. The object of these operations was to unite the ureter to the bowel by a lateral anastomosis so that dilatation of the ureter and ascending infection could be avoided. In 2 of the dogs which recovered, through faulty technic the intestinal mucous membrane closed and stenosis resulted. In the other dog pyelonephritis resulted in a short time, although there was no obstruction to the flow of urine.

Series III.—Ureterotrigono-intestinal anastomosis; 21 dogs operated upon; 12 died of peritonitis through the sloughing of flap; 4 died of peritonitis from other causes. The first 12 cases died from ligating the vesical arteries supplying the flap. In 9 experiments where these arteries were preserved there were 5 recoveries from the operation.

The author's modification of Maydl's technic consists briefly in the uniting by means of a continuous suture of a rectangular bladder-flap containing ureteral orifices upon the bowel after the latter has been opened. A review of the 5 experiments in which the dogs recovered shows that in 1 the ureter was occluded with the formation of an atrophic kidney. Of the 4 remaining cases 1 in which the trigonum was implanted had a non-infected kidney and pyelonephritis on the other side where ureterorectal anastomosis had been made. One died in 44 days from active pyelonephritis where the mucosa over the ureteral orifice had been accidentally removed; 1 lived two months without signs of infection of the kidneys; 1 had pyelonephritis after eight days where the mucosa was removed from the natural orifices and no sign of kidney infection in the other kidney whose orifice was implanted intact.

The general conclusions are as follows:

1. The primary mortality of uretero-intestinal anastomosis both in experimental work on animals and in man is exceedingly high.

2. The best technic is that requiring the least amount of suturing of the ureters themselves.

3. All efforts to prevent ascending renal infection in animals or in man where the ureter has been implanted without its vesical orifice have proved futile.

4. It is impossible to determine in advance the extent of the infection which will result from uretero-intestinal anastomosis. The patient may die in a few days of a pyemia or in a short time of pyelonephritis or, in rare cases, may recover from the infection with resulting contracted kidneys.

5. Hence the operation is unjustifiable, either for the purpose of making the patient more comfortable, as in exstrophy of the bladder, vesico-vaginal or uretero-vaginal fistula, or for malignant disease of the bladder.

6. The results of uretero-intestinal anastomosis through the formation of vesicorectal fistulæ have not been favorable up to the present time.

7. The success of Frank's experimental work in vesicorectal anastomosis justifies the expectation that the future results of this operation will be more satisfactory.

8. The primary mortality of ureterotrigono-intestinal anastomosis is low for an operation of this magnitude.

9. While it cannot be denied that ascending renal infection may occur after this operation, the infection as a rule is of such a type that the chances of the individual's overcoming it are good.

10. Hence, the operation of implanting the vesical flap with its ureteral orifices into the intestine is a justifiable surgical procedure.

11. There is no valve guarding the vesico-ureteral orifice; nor does the circular muscle-layer of the ureter nor the bladder-muscles themselves act as a sphincter.

12. It has been abundantly demonstrated by experimental and clinical work that the rectum tolerates the presence of urine and acts as a good substitute for the bladder and that good control over the anal sphincter will be maintained.

SCHOOL BREAK-DOWN.[1]

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"A National Crime at the Feet of American Parents" is the startling caption under which the American public has most recently had the subject of "School Break-downs" presented to it. The *Ladies' Home Journal* has a wide circulation among intelligent people, and the serious statements of this somewhat sensational article present an indictment against our school system that cannot be dismissed with a jest or answered with a sneer. We must assume that the author is sincere, that his purpose is philanthropic, and that his line of argument is put forward in good faith.

Turning to the article itself, we find that it has a statistical basis. The first statement is that "over sixteen thousand children between the ages of eight and fourteen" have been taken out of the public schools during the last school term in five cities of our country alone "because their nervous systems were wrecked and their minds were incapable of going any fur-

[1] Read before the Section on Diseases of Children of the American Medical Association, Atlantic City, N. J., June 5–8, 1900.

ther in the infernal cramming system which exists to-day in our schools." In regard to these statistics the author of the article has declined to give specific information, because, he says, "he would be sorry to give offence in some quarters by so doing." Writing on this subject, however, the United States Commissioner of Education (than whom one could not quote a better authority) says in a personal letter: "I know of no general statistics of the number of pupils withdrawn from school on account of ill health. It is probable that such a record is kept in some cities, but I should be inclined to doubt its value for your purpose, since it would be generally impossible to understand its significance. Most cities do not consider a pupil as belonging to the schools after three days' absence. A pupil temporarily ill, therefore, would probably be reported "withdrawn on account of illness." Under this "three-days rule" it may not be extravagant to assume that 16,000 pupils out of the army of children in the five principal cities of the Union have been withdrawn from school during a single school term and classed as "school break-downs." We shall make no contention with regard to the number of such withdrawals. If it has reached the aggregate of 16,000 in five of our cities it is a loud call to parents and to teachers to lend themselves to some study of the subject in the hope of a speedy understanding of its real cause. We feel obliged to contend that the assumption that all such cases, or that even any considerable proportion of them, are due to the overstrain of school life is wholly unwarrantable.

Some study of the subject during the past ten years with more or less careful observation of about 100 cases has given force to the conclusions so ably expressed in a recent paper on "Overstudy," by Dr. Leroy M. Yale. With your kind permission we will quote Dr. Yale's conclusions and then point out some of the real causes of apparent school break-downs.

"It cannot have escaped the notice of any of you," says Dr. Yale, "that the question of overstudy practically never comes up in the later years of pupilage: not in the college course and little in the high school. In professional schools the pace is very hard, indeed, but the break-downs are very rarely indeed from study. Of course all this means that the years in which we have overstudy are *precisely the years of development*, especially those covering the second dentition and puberty. The root of the matter would then seem to lie in the *developmental processes* and not in overstudy." And, again, "Study coincides with the physical disorders rather than causes them. It is easy for the physician to order the child out of school, but this may not be necessary, and, in any case, it will do little for the child's improvement unless the bodily ailments are sought out and search made for their real causes. These ailments are many, indeed, but I believe that the commonest are anemia with debility, gastro-intestinal catarrh, and some nervous manifestations, notably chorea and disturbed sleep.

In reflecting upon these astute observations it may be in order to note that while it were wrong to hide all childish disorders behind the somewhat vague diagnosis of "developmental processes," this diagnosis offers a valuable key to the situation and that physicians and parents and teachers can hardly be too much alive to its importance. As applied to our 16,000 break-downs it certainly reduces the school's responsibility to a minimum, however much it emphasizes the difficult duty of parents and physicians. From the school's standpoint certain subordinate causes of these frequent illnesses may very properly be pointed out. They are causes that all are quite ready to recognize and it is needless to deal with them in much detail.

Naturally, the subject of diet claims a first place. The offences are not only against a proper dietary but also against a proper method of eating. Haste in eating has come to be a national characteristic, and its effect upon children is very disastrous. Closely associated with the question of diet is the question of exercise. We are too apt to trust to the spontaneous instincts of the child to regulate this matter. With little exception, parents themselves are offenders against the claims of their own bodies for exercise, and the children become confirmed by a bad example in habits of irregularity.

The same observation is due in some measure in regard to the hours of sleep. The inflexibility of English custom in this matter has often been observed and doubtless has much to do with the final hardihod of the race.

In addition to these three principal contributing causes of break-down, particularly during the period of development, of adolescence, if you please, we need only mention such widely-separated questions as cleanliness, ventilation, clothing and nervous environment, to make the fact impressive that the "school strain" has at least a host of allies. Truly it seems to us at times that there would be small hope for the children if the schools did not offer a somewhat satisfying safety-valve against these multiplied dangers!

It may be of some interest to apply these conclusions for one moment to the consideration of 50 so-called cases of school break-down. Forty-three of these are girls and seven are boys. It is practically impossible to get absolutely reliable information in many such cases, but there seems to be justifiable grounds for saying that every one of these cases is in some way connected with "developmental processes." The principal indication of this is the periodicity of the disorders with the girls and the striking changes in physical appearance with the boys. Four only of the cases are certainly connected with strain of study and in these cases the strain can only be counted as a contributing cause. Twenty of the cases show irregularity of hours,

especially for sleep; seven of them at least have a special hereditary cause and certainly one-half of them are victims of luxurious living. The only conclusion of any apparent value from such a study is that the "developmental process" is the single constant element that is brought to view. We must fall back upon a proper study of adolescence for a solution of what the *Ladies' Home Journal* characterizes as a "national crime."

The author of the *Home Journal* article has made some apparent references to the famous studies of Dr. Kraepelin and we gladly invite your attention more in detail to his observations and conclusions.

Dr. Kraepelin's studies are characterized by that accuracy and acumen that have very properly made German laboratories so famous. They are outlined in two impressive monographs. One on mental work (Uber geistige Arbeit) and the other on the Hygiene of Work (Hygiene der Arbeit). In treating of the mental endurance of school children it is shown that only a few minutes of sustained attention is possible for a child of two years, and that at twelve years of age 45 minutes of such strain invariably produces fatigue. This of course necessitates rest-pauses and, commenting on these, the learned doctor emphasizes the fact that "bodily strain" (gymnasium and ordinary recess occupations) are not a suitable preparation for mental work. In both of the papers "sleep" is represented as the only sure means of recuperation after mental fatigue and the observations on the necessity of "deep sleep" in school children are very valuable indeed.

In regard to an increase of what may be called "work performance" without squandering the fund of strength, the questions of "momentum" of "work moods" and of the "art of recreation" are given a prominent hearing. The conclusions that the greatest amount of mental work should be done in the shortest possible time, and that "kind Nature has provided for the salvation of growing youth in our schools through the safety valve of *inattention*," especially concern our present discussion.

We may be permitted to observe that the study of Dr. Kraepelin, while confined principally to intellectual activity, recognizes the fact, which in America at least we consider to be demonstrated, that school presents a field for the active exercise of a variety of powers. It is the recognition of the range of activity that is the sufficient answer to most charges of overstrain based on hours of school study. We are composite creatures and the social, the political, the economic, and the instincts that must be trained. The industrial, the social, the political, the economic, and the physical forces must be counted with in school quite as much as the intellectual. Whether recognized or not, the school has always in some imperfect measure stood for that "miniature community" and "embryonic society" now consciously pointed out by Dr. John Dewey as the summit of school attainment. These activities may be masked under an appearance of "inattention," their conscious exercise may make drafts upon the "fund of strength," but it were quite impossible to lull them into absolute inactivity in school or out of it, in the growing child, and we are bound to claim that the nice balance amongst these several powers is better maintained under a system of school government than apart from it.

The strain of examinations, the pressure of unnatural stimuli, thus appear as misplaced emphasis in school life—as violence to a rational school system and not as the fruits of it. A general recognition of these principles and an intelligent study of the subject of adolescence, rather than a revolution in our school practices, present, it seems to us, the practical solution of school "break-down." It were better always to recognize the accelerating forces in a process of evolution than to attempt to tear down a fabric that after all is founded in instinct and cannot be properly characterized as an "infernal cramming process."

THE AUTOMOBILE IN COUNTRY PRACTICE.

By A. D. HARD, M.E., M.D.,
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The Creator as a mechanical engineer devised and put into practical use in Nature every mechanical principle known to the mind of man except that of the wheel. Man was permitted to invent this, the greatest of all mechanical ideas, and the evolution of the wheel has been a correct index of the progress of civilization in all lands. It forms the foundation of all art which has for its purpose the subjugation of Nature for the material benefit of man, and it is used in the production of nine-tenths of all acquisitions which distinguish the civilized man from the barbarian. Of all its beneficent uses, however, probably the greatest and best is found in its aid to transportation. It practically diminishes distance, makes otherwise impossible progress possible and renders accessible to man the resources of the whole earth. Unlike all other great inventions of the human intellect its date or even the age of its discovery, as well as the name of its inventor, is not recorded on the pages of history.

The wire suspension wheel with its resillient tire and ball-bearings of to-day has opened the door to an age of automobile locomotion, and no user of vehicles is more interested in the perfection of the automobile for practical use than the country physician. But the doctor who is obliged to travel over all kinds of imperfect roads, and in all kinds of severe weather, and at any time of the darkest night, must have a means of certain locomotion which the present stage of the development of the automobile does not offer to him.

The misleading advertisements of manufacturers of automobiles have induced a few coun-

try physicians to pay quite dearly for experimental lessons of experience, and a little exact truth as to the practical merits and shortcomings of the different systems now in use may be of timely value.

Three different ways of securing power to propel horseless carriages have been commercialized. The electric current, hydrocarbon expansion by rapid combustion of gasoline, and steam. Of the three vehicles representing these systems the electric carriage comes nearest meeting the country physician's requirements, but it has defects which so far have proven unsurmountable and place it wholly out of range of practical use. The best electric carriage suitable for a physician's use that can be purchased to-day will not travel twenty miles over average country roads without being recharged at considerable trouble and expense even at convenient places. Another fatal objection is its great weight. The storage battery of the regular runabout weighs six hundred pounds and requires a cumbersome gear which increases the vehicle's weight to twelve hundred pounds. Rubber pneumatic tires on a vehicle of this weight are necessarily short-lived and full of trouble. This great weight also diminishes the effectiveness of the vehicle in climbing hills, going through mud, and in facility of handling both in and out of use. It is an impractical weight compared to the work required of the vehicle.

On paved city streets or very favorable roads, for short and infrequent trips, and where facilities favor recharging of the storage battery or admit of frequent relays, the electric carriage works charmingly. But little care is required to operate it successfully, no element of danger exists as a constant threat to the safety of the rider or the integrity of the machine. It is free from objectionable noises, odors or appearances. It is safe to leave for any length of time and is ready for instant use upon the user's return. It has no delicate mechanisms to get out of order easily, and extremes of weather will not incapacitate it for use. When an electric top-buggy weighing about five hundred pounds can be furnished that will run seventy-five miles without being recharged, will climb twenty-five per cent. grades, and can be economically charged at home from a small plant to be kept for that special purpose, then it will be a practical vehicle for the country physician to use in his practice.

The hydrocarbon system, consisting in getting power from explosions of ignited gas derived from gasoline, when first devised gave promise of great practical use in automobiles, but so far it has been disappointing to a considerable extent. The weight of the gasoline vehicle is about the same as that of the cumbersome electric "runabout," its machinery is complicated and easily deranged, it lacks starting power, it can not climb the hills found on ordinary roads, and extreme cold weather interferes with its use completely. It gives off bad odors while in use, makes an objectionable noise, and cannot be depended upon to work when most needed. If stopped in a soft road or on an ascent it is almost impossible to get the clumsy thing again into action, and it has not even the advantages of a balky team under those conditions, for you cannot lead or coax it. It has some good features not found in the electric carriage. It carries enough gasoline to run it seventy-five miles without refilling and can be quickly and conveniently recharged for use. Its power-supply does not depend upon an independent power-plant. The gasoline carriage may be left safely any length of time and is ready for instant use when wanted, the expense of running is small, and when not in use its stored energy does not depreciate by unavoidable leakage as does that of the electric vehicle. There is but little danger connected with its use and its manipulation is easily learned by the average individual.

The steam-driven carriage is the one which the writer has had the best results with so far in regular country practice, but its faults are many and it is not likely to prove satisfactory in use to any one who is not a skilled mechanic and also has a fair idea of steam-engineering. It is as complicated as a railway locomotive and demands constant care of a technical order to get any good results from its use. Its machinery is complicated and delicate and every part is like the links of a chain—if one gives way all are useless.

The boiler is constantly striving to destroy itself by getting rid of its water-supply and the greatest vigilance is constantly required to counteract its suicidal tendencies. Steam is necessarily formed very rapidly, but the high speed, high pressure, double cylinders use it up equally fast or faster, and both skill and experience sometimes fail in keeping up a working head of power. Cold weather or a strong wind interferes with steam-production, and unless rainwater is used exclusively the boiler is apt to give a great deal of trouble by "foaming" which, if not properly attended to, quickly results in fatal injury to the flues, and the carriage cannot again be used until the boiler is sent to the factory for expensive repairs. The proper supply of fuel, water and steam call for unremitting attention, and the wearing parts must be frequently examined and oiled. Small water-pipes exposed to the air will freeze up in zero weather, therefore the carriage can be used only in mild climates or in summer. The machinery is all exposed to dust, and the sprocket-wheel which drives the rear wheels only clears the ground by nine inches. There are no gauges to indicate the amount of fuel or water in the tanks, and no automatic pump governor to keep the boiler regularly supplied. When in use the burner gives off bad odors, and more or less steam cloud results dependent upon the condition of the atmosphere, while the exhaust makes enough noise to alarm horses if at all timid. If the vehicle is allowed to stand with steam up for but a few moments it will blow off steam with great alarm

to all horses nearby, and if the fire is turned out considerable time and trouble are required to restore steam-power before the journey can be resumed. Some of its advantages, however, are possessed by no other form of automobile. It weighs scarcely five hundred pounds yet has power sufficient to climb easily twenty-five per cent. grades. It has good starting ability and strong steady pull not dependent upon momentum, it develops speed rapidly and may be easily and accurately controlled in every way. It carries fuel sufficient for a seventy-five-mile run and may be recharged by simply refilling the fuel tank with common stove gasoline. It carries water sufficient for a run of twenty-five miles and may be watered as conveniently as a team of horses. There is more good prospects of improvement along practical lines in the steam automobile than can be discerned in either the electric or the gasoline carriages. Many of the present defects admit of correction, and when a steam-generator is put in use which instantly converts into steam small and variable quantities of water so that the power needed may be produced at will without a reserve supply of water and steam in a boiler, there is no apparent reason why all of the objections found in the steam carriage of to-day may not be successfully met.

It is to be supposed that the manufacturers of automobiles will take exception to some of the statements which I have made, but I speak from actual unbiased experience with a familiarity with the subject obtained by several years of close study and observation. The country physician cannot successfully use any automobile now on the market to make his regular trips over average roads at all times of the year, and an investment made upon different representations will result in disappointment and failure.

CLINICAL MEMORANDUM.

RESULTS OF TWO HUNDRED OPERATIONS ON INSANE WOMEN.[1]

By R. M. BUCKE, M.D.,
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I HAVE in the past taken up so much of your time that in truth I almost fear to infringe upon it further. If I do so it is your own fault, the indulgence you have extended toward me encouraging me to again address you. I will not, however, upon this occasion tax your patience as I have done so often in the past. My intention to-day is comparatively innocent. I propose simply to make a report to you of our gynecological work at London Asylum down to date, in order that you may see what we are at present doing and what results we have so far achieved.

We have examined 256 women, in nearly every case under an anesthetic. In these 256 cases we have found structural disease in the uterus, ovaries or their adnexa, 219 times. We have operated in 200 of these cases. In three more of the 219 we intend to operate immediately. The other 16, although there was disease, were not considered suitable cases for operation.

The diseased conditions found in the 219 women were as follows: Subinvolution or endomtritis or both in 146 cases; diseased or lacerated cervix in 71; polypus of the cervix in 5; retroverted or prolapsed uterus in 77; new growths, fibroids, etc., in 19; diseased ovaries or tubes or both in 36; perineal tears and fistulae in 39; that is, 393 diseased conditions in the 219 women.

The operations performed in the 200 cases so far attended to have been: Curettage, 151; trachelorrhaphy or amputation of the cervix, 62; Alexander's operation for retroversion, 44; ventrosuspension of uterus, 16; perineorrhophy, 31; ovariotomy, 26; hysterectomy, 25; myomectomy, 5; celiotomy for tubercular peritonitis, 2; or, 362 operations in the 200 cases.

The result of these operations stated in general terms has been in the first place four deaths. In the other 196 women the bodily health has been either restored or improved in nearly every case. Upon the mental condition the result has been the recovery from their insanity of 83 women, and the marked mental improvement of 45 other women, leaving (to date) 68 of the 196 women so far mentally unimproved. But it must be borne in mind that several of the patients recently operated upon and so far unchanged mentally are liable to improve or recover, and that several of the patients who to-day are set down as improved are liable to become, after a longer time, quite well.

One of the most interesting points in our experience has been the diversity in the result of the operation corresponding to the diversity in the organ operated upon, that is, corresponding to the character of the disease removed. In order to bring out this point more clearly I will include now in our consideration 63 operations other than gynecological done also within the last five years. Many of these 63 operations in general surgery were Bassini's for hernia, the others mostly removal of new growths. As a result of these 63 operations we had only one mental recovery, while as stated we had 83 mental recoveries after the operations in the 200 gynecological cases.

If now we classify the 196 cases which continued to live after the operation, we find that of 13 cases of repair of torn perineum and operations for fistula, only 2 recovered mental health. Of 21 cases of removal of tumors only 8 recovered, whereas of 54 cases of cure of prolapsed uteri and adnexa 23, or nearly one-half, recovered. Of 83 cases of removal of disease of the body of the uterus or of the cervix 35, also nearly one-half, recovered, and of 25 cases of removal

[1] Read before the American Medico-Psychological Association, Richmond, Va., May 22–25, 1900.

of disease of the ovaries or tubes or both no less than 15 recovered.

The meaning of these facts seems to be that of the diseased conditions under consideration diseases of ovaries and tubes have the most influence upon the mental health of the patient, that is, the most influence in the causation of insanity; that disease of the body of the uterus and cervix comes next in importance as a cause of mental disturbance; that uterine tumors and tears of the perineum rank still lower, and that ordinary surgical diseases, such as hernia and tumors of the body at large, seem to have no influence at all as causes of such disturbance.

This, it seems to me, is exactly what we might expect, since the ovaries and tubes are the most vital, the most highly organized, the most intimately associated with the mental and spiritual life of all the organs under consideration, the uterus and cervix being the next most vital and highly organized, and so on to organs affected by ordinary surgical diseases which do not appear to exercise any influence in the causation of insanity.

But, it will be said, if so many cases of insanity at London Asylum are really cured or bettered by this method of treatment, which at that institution at least is new, then the statistics of the Asylum should show the influence of the new factor. Well, so they do. For instance: The average recovery-rate, including cases improved, in the male halls of London Asylum for the four years 1892-95, calculated upon the whole number under treatment, each year was 5.1 per cent. For the four years 1896-99 it was 4.7 per cent. The average recovery-rate, including cases improved, in the female halls of the asylum for the four years 1892-95, calculated upon the whole number under treatment each year, was 4 per cent., whereas for the four years 1896-99 (after the operative work had become a factor) it rose to 5.55 per cent.

Again, the average recovery-rate, including cases improved, calculated upon the admissions, was in the male halls during the four years 1892-95, 34 per cent., and in the four years 1896-99 it was 37 per cent.

In the female halls for the four years 1892-95 the recovery-rate, calculated upon the admissions, including cases improved, was 35 per cent., but in the four years 1896-99 (after the operative work had become a factor) it rose to 51 per cent.

There is still another way of presenting the same fact. For the last twelve years the number of patients in residence and the annual admissions have remained about the same year by year; and on the men's side the recovery-rate has also remained practically stationary. But not so on the women's side of the house. For instance, during the four years 1888-91 a total of 76 women was discharged from the asylum recovered and improved. During the next four years 1892-95 (in the course of the last one of which we operated on 19 cases, 3 of the patients recovering and being discharged before the end of the year) 93 women were discharged recovered and improved. But during the last four years, 1896-99 (throughout which period nearly all our operative work has been done), no less than 130 women have been discharged recovered and improved. This means that certainly over 40 women and probably nearer 50 during the last four years have owed their discharge from the asylum (recovered or improved) to this operative work, and that without it they would be at the present time either dead or still residents of the asylum.

In conclusion I want to say that we never in any case operate for insanity. We deal with our patients just as if they were sane. A woman is admitted to the asylum. She is sick. We find on examination that she has a subinvoluted uterus, an ovarian tumor, or a lacerated perineum. We remedy the defect, if we can, whatever it is, knowing well that her general health cannot be brought up to par until that is done. Had the patient been sane, just sick in the ordinary sense, the operation would equally have been required and we should have done it. Or the woman may be an epileptic and her recovery from her insanity may be hopeless. It makes no difference—we perform whatever operation (if any) is indicated by the woman's physical condition. It is for that we operate; if her mental condition is also improved or restored we are glad, though we did not operate for that. But even if a sane woman has an ovarian cyst or a retroverted uterus or a torn perineum and is cured by an operation, is not her mental condition improved? In both cases the mental improvement or recovery, if it occurs, is a very natural result of relief from physical disability, disease and suffering.

MEDICAL PROGRESS.

Hysteria; Its Nature and Etiology.—It is commonly agreed that hysteria affects the cerebral cortex alone, for in its origin it is most closely related to psychic stimuli, in its course it can be affected only by psychic influences, and in its symptomatology the psychic centers alone are involved. In hysterical amblyopia or amaurosis, writes C. L. Mix (*N. Y. Med. Jour.*, Aug. 4, 1900), it can be shown that the patient sees with the eye supposedly blind, that there is no lesion of retina, optic tract or secondary visual centers, but that the sight-perception area in the occipital cortex is insensitive to visual impulses. Similarly the heat and cold sensations, areas of anesthesia, paralyses, etc., are due to faults of the sensory and motor areas of the cortex and not to lesions of the cord. Hysterical disturbances are always functional and belong to one or more of three types: (1) Deadening of sensory excitability, resulting in hypesthesia, anesthesia, hypalgesia, analgesia; or deadening of the cortical motor discharge with paresis and paralysis.

(2) Intensification of the perception of the entering impulse, as in hyperesthesia and hyperalgesia, or of the energy of the motor discharge resulting in spasms and convulsions, often reflex. (3) Confusional interpretation of entering impulses as in paresthesia, of confusion in the motor discharge of cortical cells manifested by hysterical ataxia, contractures, etc. The predisposing causes are heredity, adolescence, female sex, protracted and exhausting constitutional disease, disease of the sexual organs, and faulty education and home-training with failure to teach self-control. The exciting causes are *psychic trauma,* as fear, jealousy, mental strain, etc.; *physical trauma* as in railroad spine, *suggestion* as in hysterical joints, repeated medical examinations, etc., and various *toxemias,* due to alcohol, lead, morphine, cocaine, etc. The keynote of hysterical manifestations is their multiplicity and variability. The mild form, with psychical excitability, restlessness, anxiety, hypochondriasis, headache, globus hystericus, dyspepsia, palpitation, and fugitive vague pains, is often confused with neurasthenia. The more marked cases show sensory disturbances, paralysis, aphonia, contractures, anorexia, vomiting, various neuralgias, etc. In the most intense form there are convulsions and other symptoms of gravity. The development is gradual, as a rule, but in the traumatic form it may be sudden; the course is rarely acute, usually chronic and incurable, yet deaths have resulted from hysterical fright. In diagnosis, if any one organic symptom is present, careful search must be made for the organic disease suggested, not forgetting, however, the possibility of a combination or organic disease with hysteria.

Vulvovaginitis in Children.—According to etiology, says H. B. Sheffield (*N. Y. Med. Jour.,* August 4, 1900), this may be divided into three types, *viz.,* catarrhal, due to want of cleanliness or chemical irritation, traumatic due to masturbation, mechanical injury, or indecent violence, and parasitic, due to oxyurides, saprophytes, and pathogenic bacteria, especially the gonococcus. The differential diagnosis is of the utmost importance and is not difficult following the above classification. Meeting with a case we first obtain a full history, then inspect the affected parts, and finally examine the vaginal discharge under the microscope. This last should be just as much a routine as the rest of the examination, as gonorrhea may complicate any of the other forms. The active treatment depends on the cause. Foreign bodies must be removed, worms destroyed by small doses of calomel and santonin and the injection of infusion of quassia, and protargol solutions injected to arrest the discharge. The usual protargol solution is one per cent. weaker if the mucous membrane is sensitive, and two per cent. in gonorrheal infection. One to two ounces of this is injected into the vagina after thorough cleansing with a five per-cent. solution of sodium bicarbonate, and allowed to remain for five minutes, this to be repeated three to five times in twenty-four hours. When the urethra is involved, crayons of protargol and iodoform, each one grain, peruvian balsam one-half drop, extract of belladonna one-twelfth grain, and cocoa butter, q. s., may be introduced once or twice a day. For painful micturition use alkaline sitz-baths and alkaline diuretics; for severe pruritus the child is put to bed and a powder of zinc oxide and starch applied. For prophylaxis in gonorrheal vulvovaginitis, the child must be isolated, and prevented from using common closet, bath or towel. To prevent ophthalmia a few drops of a half-per-cent. solution of protargol may be dropped into each eye three times a day, and a vulvar pad of absorbent cotton with an outer layer of oiled silk applied snugly over the vulva by means of a T-bandage. The arms may be held up by a sling. To prevent peritonitis, avoid douching, or at least do not have the douche-bag more than two feet above the level of the child's body, as by a strong current the vaginal secretion may be forced into the uterus and tubes. A half-ounce glass syringe with a small, soft-rubber catheter is the best injector.

Hypnotism in General Practice.—All cases may be divided, says E. H. Martin (*Med. Rec.,* August 4, 1900), into three classes in this regard, those in which nothing will do so well as hypnotism, those in which hypnotism aids other treatment, and those in which hypnotism is not worth while. In the first class are persistent insomnia, nausea and vomiting of pregnancy, the pressure pains of the fifth or sixth month of pregnancy, wrenched back, headache and toothache not of organic origin. The second class includes a large number of conditions, as minor surgical operations, extracting teeth, labor pains, irritable stomach following pneumonia, etc. Complete surgical anesthesia can rarely be induced, but usually pain is relieved. The author adds a few words of caution never to use it for fun, or unless the case demands it, and use it as seldom as possible. As to its use in hysteria, in most cases the subjects will fail to become hypnotized, or when they do succumb they may go into astonishingly exaggerated stages of hypnosis, catalepsy, somnambulism, etc., and may exhibit contractures. If one hysterical symptom is removed another takes its place, because hysteria is a derangement of the functional activity of that part of the brain, the product of which is called the "subconscious" mind, the very thing that is acted upon by hypnotism. Simple suggestion does more good in the largest number of hysterical cases. For methods, the author refers to the works of Moll and Bernheim.

Medicinal Treatment of Appendicitis.—As the presence of intestinal accumulations in this condition, writes C. Rosewater (*Med. Rec.,* August 4, 1900), threatens to aggravate the inflammation, the first step is to empty the bowel by calomel and a saline cathartic. Next a high enema of a gallon or two of salt water unless an abscess is

made out. Keep the patient on his back, give peptonized milk, place an ice-bag over the groin, and avoid opiates. For irritable stomach give calomel, gr. 1-20 every hour, and cracked ice or iced champagne. For the fever and nervous manifestations, salol and phenacetin, each gr. ij, with caffeine citrated, gr. ⅛, every two to four hours. Stimulate when necessary, and promote absorption of the exudate with ammonium iodide, gr. i-iij every four hours, followed by copious draughts of hot water.

Hydrotherapy in Pneumonia.—Pneumonia is an infectious disease which tends to destroy life, says Simon Baruch (*Med. Rec.*, August 4, 1900), by enfeebling the nervous and circulatory systems, and the indications for overcoming this lethal tendency are to fortify the nervous system, sustain the heart, promote elimination of noxious products, and render the patient comfortable by reducing temperature, deepening inspiration, and producing sleep. The pneumonia patient responds quickly to heat abstraction, and does not bear well the disturbance of tub-bathing, therefore the Brand system, so useful in typhoid, is not suitable in pneumonia. For young children, the author uses full baths at 95°-80° F. or cold affusions at 70°-60° F. in bronchopneumonia with bronchial obstruction, as in these cases pleurisy is usually absent, and the shallow breathing is relieved by the agitation, crying, and coughing from the bath. Begin with a tub-bath five degrees below the patient's temperature, and lower two or three degrees at each bath until 80° F. is reached. Bathe head and face in water at 65° F. before entering bath and apply gentle friction to the entire body while in the bath. In adults so long as the temperature is over 100° F., a compress made of three folds of old coarse linen, wrung out of water at 60° F., is wrapped around the chest from clavicle to umbilicus and covered by a layer of thin flannel one inch wider and longer. Such a compress produces a reflex nervous irritation which is shown by the patient's momentary gasp, heightened pulse tension, deepened and slowed inspiration, and lowered temperature. If the body temperature is not over 102° F., the compress may be thoroughly wrung out so as to make the impression of cold more brief, reaction more rapid and less enduring, and the whole effect more stimulating. If the temperature be high, let the compress remain soaked with water at 95° F., so rendering the reaction more slow and enduring, abstracting more heat, and making the general effect more soothing and antipyretic. If there is a depressing effect, evidenced by prolonged chilliness, chattering of teeth, and cyanosis, the procedure must be modified or abandoned. At the same time milk or other liquid food is alternated with four to six ounces of water at 45° F. by mouth. The former ensures systematic nutrition, the latter acts as a cold douche to the stomach, increases the urine, and promotes the elimination of toxins. The cold compress really becomes a poultice, soothing, relieving pain, dyspnea, shallow and rapid breathing, but not relaxing the cutaneous vessels, and elevating temperature, as does the old-fashioned hot poultice. At the same time there is an increase of blood-cells beneath the compress when the reaction occurs, and this in itself must enhance the natural processes of restitution.

Operative Treatment of Goiter.—J. Berry (*Brit. Med. Jour.*, July 7, 1900) publishes some observations on the surgical treatment of goiter. While the enucleation is simple and safe, it is applicable only to localized tumors, hence skill in diagnosis is very essential. To attempt enucleation in an unsuitable case and to abandon it for an extirpation means considerable danger from hemorrhage and increased difficulty in performing extirpation. Many goiters, especially soft parenchymatous ones in young people, are curable by medical means; a still larger number, though not curable, do not cause sufficient trouble to demand operation. The main reason for operating is dyspnea, either present or threatened; or in elderly people increase in hardness and size leading one to suspect malignant change. In a few cases operation is undertaken because of deformity. Dysphagia is rarely a prominent symptom of benign goiter. There are two types of goiter especially dangerous to life by causing sudden dyspnea, *viz.*, the bilateral, rapidly-growing, parenchymatous goiter in young people, in which fatal dyspnea may intervene within a few hours, and the unilateral tumor, situated so low in the neck as to be jammed in the upper opening of the thorax, which, from displacement or sudden increase from internal hemorrhage, may cause most grave symptoms. Unless such cases yield readily to medical treatment surgical interference is advisable. When a small goiter is associated with marked dyspnea the trachea is nearly always compressed by another tumor hidden from view. In cases of marked dyspnea there is grave danger in the use of a general anesthetic, especially just as the tumor is being lifted from its bed. A local anesthetic allows the patient to give intelligent assistance, prevents the venous oozing due to retching, and efficiently prevents pain. The incision giving most room is one along the anterior border of the sternomastoid. The transverse incision leaves a better scar low down in the neck, but it gives little room, and it is often necessary to cut the anterior neck muscles. In extirpation one must avoid injuring the recurrent laryngeal nerves, and a good way to do this is to isolate the lobe from surrounding tissues till near the trachea, and then to cut through the capsule and leave *in situ* the portion of capsule and a thin layer of gland which naturally cover the recurrent nerve. In enucleation one must keep a watchful eye on the hemorrhage. The results are uniformly good.

Torsion of Ovarian Pedicle.—A. Doran (*Brit. Med. Jour.*, July 14, 1900) says tumors of ir-

regular form are very liable to become twisted, especially when the pedicle is short. Where there are two tumors one may cause the other to rotate. When a big cyst is tapped it often produces a torsion of the pedicle as it empties, but this should not be registered among torsion cases. Dermoids especially tend to rotate on their pedicles, partly because they are irregular in form and partly because they are often overweighted at one point by masses of bone or other heavy substances. The contraction of the abdominal muscles is more apt to cause rotation of a tumor than intestinal peristalsis or the passage of scybala, although authorities are still divided on this subject.

Rupture of Apparently Healthy Esophagus.—E. J. McWeeney (*Lancet*, July 21, 1900) summarizes the results of a study of cases of rupture of apparently healthy esophagus as follows: The great majority of cases are in men in the prime of life; especially those addicted to alcohol and subject to frequent attacks of vomiting and retching; retching or vomiting is almost invariably the exciting cause. The symptoms consist of a sense of "giving way" within, agonizing pain, soon followed by dyspnea and collapse; the pain is aggravated by swallowing; the characteristic attitude is a sitting posture with the trunk stooped forward as far as possible; the most striking and most constant symptom is emphysema, appearing first in the neck and spreading to the face and trunk. The great majority of cases die within twenty-four hours. The rupture is almost invariably a longitudinal slit, just above the diaphragm, usually opening into the left pleural cavity. The two chief etiological factors in rupture of macroscopically normal gullet are softening of the coats, and sudden increase of pressure from within. The softening is due partly to intravital digestion, and partly to inflammatory infiltration. The digestion is due to circulatory disturbance and prolonged sojourn of peptic matters in the gullet from retching. Increased pressure is ascribable to violent propulsion of gastric contents into the lower part of the gullet while the upper part is obstructed by muscular spasm due to overactivity. All cases have been fatal, but with the development of mediastinal surgery lies hope for the future.

Etiology of Cancer.—The *Birmingham Medical Review* for July, 1900, contains the report of a committee whose object it has been to ascertain the influence of external factors on the prevalence of carcinoma in England and Wales. It was found that there are areas more or less extensive throughout the whole of which the percentage of deaths from cancer is very much above, and others where it is very much below, the average. It was also evident that there are circumscribed often clearly-defined areas, where the percentage is very high and that there exist groups of houses in which cancer has occurred with great frequency. It was not so easy to answer what physical conditions are present in those districts where cancer is common and absent from those where it is rare, but it is significant that old streets and houses seem to contribute an undue proportion of cases and that contamination with sewage is very frequently present. No uniformity of opinion could be obtained with reference to the geological character of the subsoil, it being stated by some observers that cases occur more often upon a clay soil, and by others upon a sandy or gravelly soil. It is probable that a stiff clay subsoil lying in a hollow would prevent or retard the running-off of the surface-water and more readily permit of the gradual contamination of the soil, while, if lying on a slope, the same characteristic of want of porosity would act in the contrary direction. The next points dealt with were the effects of "age and sex incident." The results clearly show that it is only a small proportion of the increased or diminished death-rate from cancer which is due to these causes. The committee is also inclined to think that owing to the great difficulty of diagnosis the death-rate from cancer is probably at present underestimated, and that there is some evidence suggesting that under certain circumstances cancer may possibly be transmitted from one person to another in constant close association.

Intestinal Syphilis.—A. Fournier (*Klin. therap. Woch.*, July 15, 1900) wishes to draw the attention of physicians to the fact that in obstinate chronic diarrhea the possibility of syphilis as a cause in the form of miliary gummata, ulcerative infiltrations, cicatrices, stenoses and perforations, should not be overlooked. There is nothing pathognomonic in the diarrhea which is usually accompanied by colic, but suspicion should be aroused (1) when syphilitic antecedents are present; (2) when no other cause can be determined; (3) when it resists the usual treatment, but readily yields to antisyphilitic medication, and (4) when other tertiary signs exist. Syphilitic enteritis may occur very late and is liable to recur. Iodide of potassium seems to be less able to control it than mercury, but the author has obtained the best results from mixed treatment.

Treatment of Gonorrhea.—The daily irrigation of the anterior and posterior urethra with half a liter of a hot solution of silver nitrate, 1 : 4000 increased to 1 : 2000, by means of a Janet irrigator is lauded by M. Hodara (*Monatschft. f. prak. Dermatolog.*, July 15, 1900) as the best treatment for urethritis, since a perfect cure is effected in from two to four weeks and no complications make their appearance. The same treatment is equally efficient in acute epididymitis of gonorrheal origin.

Congenital Tuberculosis.— B. F. Lyle (*Phila. Med. Jour.*, August 4, 1900) reports a case of tuberculosis in an infant which he thinks was congenital. The mother was a colored woman who was admitted to the hospital with all the

symptoms and physical signs of tuberculosis, from which she had been suffering for two years. She was in a delirious condition most of the time while in the hospital. Thirteen days after admission she gave birth to a child without any warning of any kind, and was apparently oblivious of her travail. The mother died two days later, and the autopsy gave abundant evidence of her tuberculous condition. The child weighed three and a half pounds at birth, and gradualy increased in weight during the first eight weeks to five pounds, and then lost somewhat. The child's temperature was subnormal at first, and then was above normal until shortly before death. It had a good appetite until the week before its death. The post-mortem examination showed a greatly emaciated body. The lungs were filled with myriads of minute caseous tubercular deposits, some of which had coalesced. There were similar deposits also in the liver and spleen. In the kidneys there were a few caseous deposits in the cortical substance. The bronchial glands were much enlarged. The masses contained tubercle bacilli. Intestines and mesenteric glands were normal. Lyle believes that this was a case of congenital tuberculosis, because (1) the child was removed from all danger of inspiring the germs by being kept away from the wards; (2) the freedom of the intestines and mesenteric glands from indications of the disease show that it was not contracted through the milk; (3) the child was evidently ill at birth, as shown by the subnormal temperature at first, and by the elevated temperature after the child had gained some strength, the temperature-curve throughout being characteristic of tuberculosis; (4) a synchronous infection in the blood of the child is indicated by the great number of deposits, all in the same stage, in the various organs. The only source of the bacilli could be the mother's blood.

Transportation of Disease by Dust.—Dust may act injuriously upon us in two ways: (1) By an irritant action on the respiratory passages, and (2) by the transportation of pathogenic bacteria. H. C. Ernst (*Boston Med. and Surg. Jour.*, August 2, 1900) says that there can be no doubt of the irritant action of dust upon the respiratory passages, as it is composed of minute jagged particles of mineral and vegetable matter which plainly would irritate any weakened area of the respiratory tract. As to the transportation of disease by dust, in a few cultures from dust the writer found the amount of gas production to be very great and the bacteria numbered about 80,000 to the gram. Two inoculation experiments produced only local necrosis. He had not had time to carry his experiments further when this paper was read. He, however, quotes fully the results of the studies of Germano, who classified bacteria according to their resistance to drying as follows: (1) Typhoid, cholera, the plague, influenza and gonorrhea bacteria often died within twenty-four hours. Chance of transportation of these diseases by the air is very slight. (2) The streptococci, the pneumococci and the diphtheria bacillus showed great variation in resistance to drying, some living even a month, but most of them died quickly. (3) The diplococcus intracellularis, the staphylococci of suppuration and the bacillus of tuberculosis were still more resistant. (4) This group includes the spore-producers, which in this way may resist drying for an indefinite period, anthrax tetanus, malignant edema, etc. Ernst concludes, from his own studies and from those of other investigators, that the danger from dust is greater from the direct irritant quality of the dust itself than from the chance of the transportation of any infectious disease.

Malaria with Acute Abdominal Pain.—J. A. Capps (*Jour. Am. Med. Assoc.*, August 4, 1900) reports in detail four interesting cases of malaria associated with acute abdominal pain. The patients were all women and were sent to the hospital for operation for acute salpingitis, gallstone, colic or gastric ulcer with perforation, extra-uterine pregnancy, and appendicitis, respectively. In each one of these cases the following observations were made: (1) There were intermittent fever, nausea and vomiting and enlargement of the spleen. (2) There was acute abdominal pain of such intensity that exploratory laparotomy was considered by men of experience. (3) The acute pain subsided along with the fever and with the other symptoms after the administration of quinine. (4) Typical intracellular forms of the tertian parasite of malaria with motile pigment granules were present in the peripheral blood, but never very numerous. (5) Leucocytosis was invariably absent. (6) A considerable degree of anemia existed of the secondary type. The presence of the tertian parasite in each case demonstrated the presence of malaria, and the subsidence of all symptoms after the administration of quinine confirmed the diagnosis. The cause of the pain must be either (1) some coexisting disease; (2) a neuralgia from malarial poison, or (3) both combined. In not one of these cases was there a coexisting disease in an *acute* state. This point was indicated by the absence of leucocytosis, and illustrates the value of the leucocyte count. The writer thinks that the chronic disease coexisting in two of the cases may be considered as the predisposing cause of the pain. He, however, thinks that the pain was a neuralgia caused by the malarial toxin in the blood, and he cites numerous writers showing that malaria is often considered to be the cause of neuralgia and also neuritis. He divides the neuralgias of malaria into (1) the toxic, occurring during the febrile attack, associated with the presence of the plasmodia in the blood, and due to an intoxication with the malarial poison, and (2) the post-infective, which are the result of anemia and cachexia. Capps emphasized the importance of examining

the blood for malaria and of counting the white blood-corpuscles in all obscure acute abdominal diseases. Malarial neuralgias require large doses of quinine. In post-infective neuralgias the anemia present must also be treated.

Foreign Bodies into the Intestines.—Wunderlich of Neudorf (*Münch. med. Woch.*, July 10, 1900) relates two cases of foreign body left in the abdominal cavity after laparotomy. Case I., female, aged fifty-six years; laparotomy for a large ovarian cyst with adhesions complicating and prolonging the operation; primary and prompt union of the wound; perfect recovery; four months after operation sudden inexplicable onset of bad diarrhea resisting medicinal treatment; after a time a piece of gauze about six by twenty-four inches was passed and all symptoms ended. Case II., female, aged thirty-nine years; much depreciated by severe long-standing cholecystitis; anemia; jaundice; emaciation; extirpation of the gall-bladder relatively easy; good progress till thirty-six hours after operation; sudden death apparently from heart-failure. Autopsy showed a healthy peritoneal cavity containing a piece of pad such as is used to wall off the cavity during operation. It seemed to have no relation to the exitus. These two accidents occurred although assistants pronounced the counts correct. Now the writer counts instruments and pads himself.

Tuberculous Osteo-arthritis.—G. Trunegek says that tuberculosis of the joints (*La Semaine Médicale*, July 11, 1900) may be the primary single focus or the expression of a general infection or one of several foci. Of such conditions general adenitis in children and pulmonary lesions in adults are familiar examples. The peculiar reaction of the organism to the bacillus of Koch indicates that any treatment of an accessible nidus must have in mind either the total extirpation of that morbid center and replacement of it by healthy granulation or scar-tissue or the shutting off of it from the surrounding healthy tissue. Several good methods of treatment have been in use for some time. Surgical extirpation is not always advisable or permissible. The method of Bier by which great circulatory activity about the joint is aroused fails wholly or partially when sinuses exist. Hence it is applicable only in relatively early cases. The use of chloride of zinc, suggested by Lannelongue, is most excellent, but sometimes fails because the caustic is too highly destructive and does not penetrate deeply into the crevices and pockets of the sinuses. But with the necessity of a destructive agent in mind the author set out to find a caustic which would properly replace the zinc chloride. The essentials of such an agent are fluidity, activity, nontoxicity, and penetration. The fluidity must be such that, no matter how devious the abscess cavity or the tract, under slight pressure it will reach all the depths. The activity must make it absolutely destructive to the pyogenic membrane and germs but not of too much healthy substance adjoining. Absorption of the caustic must not result in toxic symptoms and its penetration must not sacrifice the adnexa too much. It was concluded to try the constituents of normal blood-serum which are as follows:

Sulphate of soda, 0.44 grains; chloride of soda, 4.92 grains; phosphate of soda, 0.15 grains; carbonate of soda, 0.21 grains; sulphate of potash, 0.41 grains; water up to 1000 grains; by increasing the proportion of these salts a caustic of the above features was produced. The formula finally adopted was this: Sulphate of soda, 1.46 grains; chloride of soda, 16.40 grains; phosphate of soda, 0.50 grains; carbonate of soda, 0.70 grains; sulphate of potash, 0.94 grains; water, 80.00 grains. The resulting fluid is clear, transparent, of disagreeable saline, burning taste, alkaline, probably non-toxic, composed of salts with which the tissues are normally in contact and which if absorbed will therefore be readily and quickly eliminated. After many trials in some of which a quart of a twenty-five per-cent. solution was employed no poisonous effects have been observed. The details of the method are these: The mouth of the sinus is gently cleansed and a very careful, gentle exploration is made to fix upon its depth and direction. Then an open-end cannula is passed into the sinus until slight resistance is felt; it is then withdrawn to insure the patency of the mouth. After the skin has been protected with boric-acid vaseline, the injection is made. To aid its penetration cotton is plugged tight about the cannula into the mouth of the sinus and considerable pressure is exerted. When there are several sinuses the return flow often passes through one of the auxiliary channels. Each sinus is *seriatim* treated until the return flow is practically clear. By this time the pyogenic membrane is thoroughly destroyed and the next step of the operation is done, consisting in injecting the sinuses and joint-cavity carefully with ten-per-cent. iodoform solution in ether. This menstrum is most rapidly volatilized and leaves the iodoform evenly distributed and in a finely-divided form everywhere. The reaction after this vigorous treatment is always violent, very but not intolerably painful, and usually highly efficacious. If a second injection into the same tracts is needed an interval of four to ten weeks is usually allowed to elapse. During the stage of inflammatory reaction the treatment comprises rest in bed, immobilization, cold applications and perhaps pressure. Among the advantages of this method are to be named its bloodlessness, always worth consideration in anemic, depreciated subjects, and its concentration upon the diseased tissues. Curetting may open the healthy tissues to further tubercular invasions while this probably destroys alike the germs and their inflammatory products. Among its indications may be enumerated osteo-arthritis, ostitis (if without sequestration), selected cases of coxalgia, abscess of joints even if deeply placed, chronic abscesses, and such tuberculous lesion.

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SURGICAL INTERFERENCE IN PERFORATION OF TYPHOID FEVER.

Thirteen years ago when Dr. W. W. Keen and Prof. J. C. Wilson first discussed the question of operating in a case of perforation in typhoid fever, not a case had been operated upon in this country and only one in Europe by Mikulicz. Since that time each year has seen reported an increased number of operations. Keen (*Jour. Am. Med. Assoc.*, January 20, 1900) has reported a series of 158 cases in which operation was performed for perforation. Recently Geo. B. Shattuck, J. Collins Warren, and Farrar Cobb (*Boston Med. and Surg. Jour.*, June 28, 1900) have made an exhaustive report upon 24 cases of typhoid operated upon because of symptoms of peritoneal infection due to intestinal perforation. These cases occurred between the years 1895 and 1900. Of these cases 18 had a positive Widal serum reaction; in 3 cases the Widal reaction was negative; and in 3 the Widal test was not made. Thus this test, corroborated by the clinical diagnosis and by the pathologic findings at the operation or post-mortem, leaves no doubt as to the correctness of the diagnosis of typhoid. All these cases presented symptoms upon which a diagnosis of perforation was made and for which an operation was performed. And yet, in 3 cases which presented symptoms of intra-abdominal infection from perforation, and were operated upon for that reason, absolutely nothing was found at the operation which could account for the symptoms. In one case operation was unable to demonstrate any cause for the general septic peritonitis which was present. Two other cases, which presented severe symptoms of intestinal perforation, at operation showed a general septic peritonitis originating in necrotic areas of peritoneum over the bases of one or more typhoid ulcers. In another case the cause of the symptoms of perforation was found at operation to be a general septic peritonitis from a ruptured mesenteric gland. Thus only 17 cases of the 24 reported were cases of peritoneal infection from actual perforation of the intestinal wall, but all presented the usually accepted symptoms of actual perforation. Twenty-one were cases of grave peritoneal infection in typhoid fever, and 3 presented the symptoms of peritoneal infection, but the diagnosis was wrong.

From these cases it appears that acute abdominal infection occurs most often between the ages of 18 and 30; that it is most frequent in men; and that it is rare in children. The fact that 18 of the 24 cases were mild cases of typhoid and that in 15 of these 18 mild cases perforation or general septic peritonitis was present, emphasizes the point that there is no relation between the severity of the cause of the fever and the likelihood of intestinal perforation. A sudden, acute exacerbation in these mild cases often indicated a sudden perforation with extravasation, while sudden fulminating symptoms in the severely sick cases were due, in a majority of these cases, to a general septic peritonitis which had been unsuspected and had developed gradually. Peritoneal infection from perforation took place during the second and third week of the disease in the greater number of cases.

In most of these cases there were definite premonitory symptoms at a time more or less remote from the severe symptoms which first led to the diagnosis. The classical diagnostic symptoms of intestinal perforation, as given in text-books, did not present themselves as a complete picture in any one of the cases. Of the seven cases, which presented fulminating symptoms and which conformed most closely to the hitherto established idea of the symptoms of intestinal

perforation, only five proved to be due to *actual sudden perforation,* while one was not a perforation at all, and in the other the perforation and subsequent peritonitis did not cause any symptoms. Sudden, severe pain, more or less localized in the right inguinal region, and accompanied by tenderness, was the chief symptom present in those cases which were proven to have perforation. There were 14 cases in which the onset of the abdominal symptoms was more or less gradual. In all these there were *distinct, warning indications* before the appearance of distinct severe and diagnostic symptoms. In all cases complaint by the patient of abdominal pain was followed by peritoneal infection. This warning abdominal pain preceded the severe symptoms by hours or days, and determined the diagnosis and the decision to operate. It is seen, from these two groups of cases, that in most of them, positive diagnosis of perforation was not made, but only a diagnosis of the peritonitis resulting from the perforation.

As to the time of operating, in the 7 cases without warning symptoms operation was done within twelve hours in every case; of the 14 cases with warning symptoms 9 were operated upon within five hours from the onset of the severe symptoms, or the time of positive diagnosis of perforation, and the others within twenty-four hours. This is in accordance with Keen's rule to operate as soon after perforation as possible, provided profound shock is not present.

In every case the perforation was found in the ileum. The size of the perforation varied from a "pin's head" to a "large irregular hole." The abdominal incision was made in the right iliac region in 12 cases and was median in 7 cases; the incision is not noted in the other cases. In the cases in which the median incision was made a long overhauling of the intestines was necessary before the perforation was found. It would seem from the site of the infected areas that the right lateral incision should be employed as a routine.

The authors discuss the kind and amount of the peritonitis found in these cases, but their findings are not of great moment, except that in those cases of sudden perforation operated upon within eight hours of the first symptoms general peritonitis was not found, while in those cases of gradual onset operated upon within eight hours of the severe or diagnostic symptoms an extensive general peritonitis was invariably present.

From a study of their cases the authors conclude that the diagnosis of intestinal perforation in typhoid is difficult, but that any complaint of abdominal pain in a typhoid case, especially if localized and especially in cases of a mild type, should be regarded as a serious danger signal. The occurrence of pain, especially localized, is not frequent in typhoid fever unless it means peritoneal infection. The majority of cases of perforation have initial symptoms referred to the right iliac region. Leucocytosis is considered as a diagnostic symptom, but in only 11 cases were leucocyte-counts made and the record of these is not complete. However, from the counts which were made it would seem that the white blood-count made hourly after the occurrence of the warning abdominal pain would have been of the greatest importance diagnostically.

Of the 21 cases in which local or general infection was found at operation 4, or 19 per cent., recovered, although one of these died five days after operation from intestinal hemorrhage, there being no peritonitis and the suture being found intact at the autopsy. The rate of recovery in Keen's 158 cases was somewhat better, being 23.41 per cent. Of the 24 cases—21 with abdominal infection and 3 with no infection found at operation—6 cases, or 25 per cent., recovered absolutely from laparotomy performed in typhoid fever. This tends to show that abdominal operation in the absence of infection is well borne in typhoid. The mortality in cases of typhoid operated upon for abdominal infection from perforation depends upon the kind, amount, and virulence of the peritoneal infection, and the resisting power of the patient. The mere operation does not kill them, nor does the fever contraindicate the operation. It must be appreciated that the severe symptoms more often mean general peritonitis, and that the earlier and milder symptoms are more important, from an operative standpoint, as indicating perforation. A prompt diagnosis of the perforation is essential.

THE CHANGES AT ELMIRA.

Mr. Brockway at last has been forced out, or rather annoyed and worried until he has voluntarily resigned from the superintendency of the Elmira Reformatory. This change has been brought about by a persistent sentiment that the Reformatory inmates should not be spanked when other means of correction have failed. Notwithstanding this fact, a few days ago a revolt of a squad of prisoners was overcome by the principal

keeper, one of the new men appointed by the reformers, who threatened to "spill the ground" with the recalcitrants. From the nature of reformatory methods and discipline, if the revolt had not been quelled by this threat, it would have been necessary to carry it into effect, and as a consequence there would have ensued an exhibition of brutal violence which would have made the spanking method pale into insignificance as a form of cruelty. We have cited this one instance of the pseudo-reform principles now inaugurated at the Reformatory to show that the whole matter of reform desired by the Brockway persecutors is a sickly bit of cant and not worthy the name of reform.

It is feared that the public fail to take into account the kind of men sent to Elmira. The prisoners average twenty-one years of age; they are men, not boys; they are there for State-prison offenses, and are felons and not young men who have been a little disobedient at home under lax parental authority. They are not accidentally criminal and antisocial because of some freak of fortune, but fully 45 per cent. of them have been in conflict with the law and its restraining agencies one or more times before being sent to the Reformatory; 68 per cent. of the prisoners are practically illiterate at time of admission; 75 per cent. are without regular or remunerative employment when sent to Elmira. The means of reclaiming by military discipline and industrial methods, that are employed at the Reformatory, are well known to all and are most excellently set forth in the admirable year-books of the institution. For the completeness of exposition of reformatory work this annual report is recommended to other institutions of similar character and purpose as a model.

To disprove the often-repeated accusation that the Reformatory methods are antiquated and that new principles looking to the establishment of new methods should be tried, an experiment of last year may be cited: Mr. Brockway endeavored to determine the reforming influence of different diets upon the school's worst delinquents. While the plan was not conducted under the best conditions for testing the experiment fully and was inconclusive, the results warranted further experiments along this same line. It seems logical that the careful selection and serving of food should have correctional power and promote moral rectitude in a reform school, as well as it does in the world at large. This reform agency has been demonstrated in a practical way in many cities, at home and abroad, by establishing good hotels and restaurants for the poor.

Mr. Brockway's mantle must fall on broad shoulders, those that are experienced and devoid of sentimental cant. The recipient must not only be able to maintain discipline, which is only a negative plan of reformation and one too often considered to be the sole essential for reforming moral delinquents, but Mr. Brockway's successor must be able to maintain and nurture the high standard of excellence that has been set in operation by the devoted life-work of his predecessor; he must make good use of those factors that really make for positive reform, namely, education of mind and body, in habits of industrial thrift, and obedience to existing social laws.

ECHOES AND NEWS.

NEW YORK.

Disposal of City Refuse.—The Street-Cleaning Department has announced this week that the patent sea-going, center-dumping scows formerly used for carrying refuse to sea have made their last voyages. Their occupation is gone. There is now a prospect of again finding at the seaside resorts in the neighborhood of New York clean beaches and uncontaminated air. The intention of the Department is to utilize the refuse and ashes as filling material at points where it may be needed. The refuse will be more carefully sorted than heretofore. The garbage will be disposed of for the present at the plant on Barren Island.

Contagious Diseases.—For the week ending August 4, 1900: Measles, 96 cases and 6 deaths; diphtheria, 160 cases and 27 deaths; laryngeal diphtheria (croup), 7 cases and 5 deaths; scarlet fever, 51 cases and 5 deaths; chicken-pox, 20 cases; tuberculosis, 186 cases and 145 deaths; typhoid fever, 44 cases and 14 deaths; cerebrospinal meningitis, 7 deaths; totals, 564 cases and 209 deaths.

Albany Medical College.—An alumnus, Dr. Clarkson C. Schuyler, '75, offers a yearly prize, to be known as the Schuyler Alumni Prize for 1901, of one hundred dollars to be awarded at the annual meeting of the Alumni Association for the best essay written by a graduate of this college on some prescribed subject. The subject for next year is: "The Influence of the Discovery of the Relation of Bacteria to Disease on the Practice of Medicine Exclusive of Surgery." Competing essays, signed by some assumed name or motto, and accompanied by a sealed envelope superscribed in the same manner and containing within the author's real name and address, are to be sent to Dr. Samuel B. Ward, Albany, of the prize committee, on or before March 1, 1901.

Phenacetin Seizure.—Inspector Davidson, of the United States Custom House, who made the seizure of the packages containing phenacetin alleged to be imported by Alfred R. Goslin, has found that the contents of the three cases are as follows: Case 1—284 one-ounce packages of sulphonal, 8 four-ounce packages of salol, 50 one-ounce packages of trional, 107 one-ounce packages of phenacetin, 10 one-ounce packages of salol, and 8 one-ounce packages of carbonate of guajacol. Case 2—466 one-ounce packages, not marked, and 32 empty packages, not marked. Case 3—119 one-ounce packages of thymodine, labeled as of American manufacture; 30 one-pound bottles of salol, 6 one-pound packages of phenacetin, 25 one-ounce packages of trioline, labeled as of American manufacture; 1 one-ounce paper of morphine sulphate, 1 one-ounce bottle of bismuth naphtholic, 2 one-ounce packages of phenacetin and salol tablets, and 4 one-ounce packages of tablets not marked.

PHILADELPHIA.

Dental Institute.—The will of the late Dr. Evans, the millionaire Paris dentist, has been settled in such a way that this city will receive $3,000,000 for founding a dental institute. Work on the buildings will be begun shortly.

Bath-Houses.—After inspecting the Philadelphia bath-houses the Camden Bath Commission has recommended to Council the erection of a $6,000 bath-house. Artesian-well water may be used.

Centenarian Undergoes Operation.—At the Presbyterian Hospital recently, Harold Beyer, in his one-hundredth year, was operated upon for strangulated hernia by Dr. De Forrest Willard. The patient made a good recovery.

Pennsylvania Hospital.—The Board of Managers have received a medal from the Paris Exposition "for the beneficent work done by the hospital during the past hundred years." The honor was well merited.

Children Aided.—During July the Pennsylvania Society to Protect Children From Cruelty investigated 103 cases involving 302 children. Twenty-three arrests were made and 39 children were taken from parents, guardians, etc., and placed in homes.

Health Report.—During the week ending August 4th there were 439 deaths in the city, a decrease of 75 from those of the previous week and an increase of 11 over the corresponding week of last year. There were 40 deaths from cholera infantum and one from cerebrospinal meningitis. Thirteen of the deaths were of people between eighty and ninety years of age and three were between ninety and one hundred. Contagious diseases: Diphtheria, 81 cases, 10 deaths; scarlet fever, 34 cases, 1 death; typhoid fever, 62 cases, 10 deaths.

CHICAGO.

Dental and Medical Education.—Not long since this subject was discussed in a spirited manner in this city, the debate lasting for three hours. One of the participants in the discussion was Henry Wade Rogers, who has done so much for the advancement of collegiate education. Dr. Rogers thinks it is wrong to license students in dentistry, in law, in medicine, or in pharmacy upon a diploma. For quite a number of years in this State a man graduating from a law school presented his diploma to the Supreme Court and was licensed as an attorney. There are schools of law in Chicago which are existing for the mere purpose of making money for the men who are teaching in them. The instruction is not half as good as it would be if the men who are conducting these schools knew that the men they are sending out under their seal will be compelled to pass an examination in order to practise their profession. The same thing applies to the dental and medical as well as to the legal profession. He believes that it would be better for professional education in this country if every professional school had a connection with a university. He does not mean a nominal connection, but one that is absolute, which enables the university to control the school. The curse of education in this country is the spirit of commercialism. If the university can control the school, it can kill that spirit.

The Alexian Brothers Hospital.—The report of this hospital for the year 1899 has just been issued, showing that the patients on December 21, 1899, numbered 174, and the number received during the past year was 2406, making a total of 2580 patients treated at the hospital during 1899. One thousand seven hundred and fourteen patients were cured, 354 improved, 86 not benefited, and 184 died. Those received at the hospital during the year in a dying condition numbered 82. Of the total number of patients, 1549 were single, 745 were married, 286 were widowers. Among them were 1486 Catholics, 948 Protestants, 39 Hebrews, and 107 who professed no religion at all. The average age of the patients was forty-seven and a half years.

Diet Kitchen.—This was opened in June for the purpose of supplying pure food and milk for infants. Thus far 414 infants have been fed, and it is said that the number applying for medical aid and food is rapidly increasing.

Mortality Statistics.—According to the weekly bulletin of the City Health Department for the week ending July 26th the mortality was exceptionally low. The total deaths from all causes were 438, a reduction of 16 from the previous week's record, and of 108 from the corresponding week of 1899. The principal causes of death were: Acute intestinal diseases, 121; consumption, 61; heart-diseases, 26; Bright's disease, 20; pneumonia, 18; nervous diseases, 15; cancer, 10. No deaths from sunstroke were reported; 4 suicides and 19 deaths by violence

were reported. The number of births recorded during the week was 565; 288 males and 277 females. The contagious cases reported were 47, of which 22 were scarlatina, 23 diphtheria, and 2 measles. There were 537 samples of milk analyzed by the laboratory of the Department, 5.20 per cent. of which were found below grade.

Smallpox.—Dr. Meyerovitz, a member of the State Board of Health, has investigated an alleged epidemic of smallpox at Chicago Heights, and finds but one case of the disease and 16 cases of scarlatina.

GENERAL.

Living on Fifteen Cents a Day.—A Chicago despatch states that President Harper, of the Chicago University, contemplates trying Miss Katherine Davis' experiment of attempting to live on fifteen cents a day.

British Army Investigation Commission.—It is reported that one of the stormiest scenes of the present session of the Commons occurred last Monday evening, when Mr. Bartlett Burdett-Coutts demanded greater powers for the Hospital Commission to investigate the management of the military hospitals in South Africa. He declared that the truth would not be learned under the present plan of investigation, as the soldiers would be afraid to testify. Mr. Balfour, government leader, in the course of a bitter reply, accused Mr. Burdett-Coutts of "maligning the character of the British Army," and sneered at what he called "the honorable member's evident nervousness as to the result of the inquiry."

American Officer Drowned.—James Stoughton, Past Assistant Surgeon of the United States gunboat "Castine," was drowned at Shanghai August 5th.

Surgeon Hulsby Killed.—A cablegram from Manila announces that Surgeon Frederick W. Hulsby was killed August 1st at Majajay, Luzon. He was from New Haven, Conn., and arrived at Manila about six weeks ago.

The Xiphopagous Twins.—On May 30, 1900, Dr. Chapot Prevost, of Brazil, separated the twins which have been the subject of much medical discussion during the past year. It will be recalled from the descriptions that have appeared in our columns that they were not united by a single band as were the Siamese twins, but their abdominal cavities were connected by a large opening, practically forming one cavity, and the thoracic cavities were also implicated, while the livers were united to nearly their whole extent. On the seventh day after the operation one of the twins died, the other continued to improve without any drawback. An autopsy revealed a state of inflammation of the pleura and pericardium with exudation, while the liver was completely healed.

Cancer in Royal Families.—The announcement of the recent death of the Duke of Edinborough from cancer is followed by the report that his sister, the Dowager Empress Frederick of Germany, is afflicted with the same disease. It will be recalled that her husband, the Emperor Frederick, died of cancer of the larynx.

British Medical Association.—The annual meeting of the British Medical Association opened July 31st at Ipswich. All sections were well attended. The chief interest centered in the navy and army section, where special discussions took place on the treatment of wounded at sea, augmentation of army medical corps in war, first aid, and transport of sick and injured in civil life in large towns, and other important subjects suggested by recent experiences in South Africa.

The Blind in Russia.—There are more than twice as many blind persons in Russia as in the whole of the rest of Europe. They number 190,000, which is equivalent to two in every 1000 of the population. In France and England the proportion is not quite one per 1000.

Artificial Light and the Eyes.—In a German photographic magazine it is stated that the conclusion has been reached by a Russian physician that the electric light is the least injurious to the eyes and that candle-light is the most harmful. He has observed the number of times that the lids are closed under otherwise similar conditions, and states that the oftener the lids are closed the greater the fatigue and consequent injury. As a result of his experiments he compiled the following table showing the number of times a minute the lids were closed with different illuminations: Candle light, 6 4-5; gas, 2 4-5; sun, 2 1-5; electric, 1 4-5.

Sick and Wounded in China.—The Naval Hospital Ship "Solace," with sick and wounded from all arms of the service, has been despatched from Taku for San Francisco. She had on board five marines and navy officers, five army officers, nine navy men, nineteen marines, sixty-five Ninth Infantry. All men will remain aboard, unless otherwise recommended by army medical authorities at Nagasaki or Surgeon Anderson at Yokohama. The Army Hospital-Ship "Relief" is ready to follow the "Solace" when necessary, or to convey the sick and wounded to the base hospital at Nagasaki. The "Maine" is now on her way to China. It is believed that the ocean voyage will so improve the men who are returning that upon their arrival at San Francisco they will be quite in condition to return to the front.

The Plague.—On August 3d 4 cases of plague and 2 deaths from the scourge were reported in London, England. Diagnosis was confirmed by bacteriologic examination. On August 6th a case of the plague was discovered on a vessel in the harbor at Hamburg, Germany. Up to July 14th 300 cases of plague had occurred in Sydney, Australia, of which number 101 died, 51 remained under treatment; 10 of the patients were Chinese, of whom 8 died. The percentage of recoveries from plague among Europeans in Sydney is very satisfactory, more than half of the number attacked having recovered. As in

China, however, the mortality from plague amongst the Chinese in Australia is very high. During the week ending July 23d, 43 cases of plague occurred in Hong Kong, and 44 deaths from the disease. In India cholera and famine are at present attracting more attention than the plague. The last seems waning, but quarantine precautions are none the less imperative.

Yellow Fever.—On August 3d it was reported from Tampa, Florida, that three cases of yellow fever had been discovered there. Two of the patients died, autopsy on one confirming the diagnosis. Strict sanitary and quarantine precautions were promptly taken and no spread of the disease had occurred up to August 7th. The Louisiana board of health has continued its strict quarantine against all Central American fruit vessels carrying passengers. Despite stringent sanitary precautions yellow fever is on the increase at Havana. Forty-eight cases were reported there August 4th and four deaths among the American soldiers at the various camps. Passengers and mails from the fever-infected steamer "Chile" are returning from Valparaiso on the steamer "Peru," and are due at Callao on August 12th. Sixty-seven passengers of the Ward Line steamer "Mexico," which arrived at New York August 7th from Havana, were sent to Hoffman Island for observation.

The Centenary of the Royal College of Surgeons.—The festival ceremonies on this anniversary recently held in London extended over three days and were attended not only by the leading men of England and the British Empire but by eminent surgeons from all the nations of the World. The *British Medical Journal* of July 28th gives an interesting account of the celebration. As an opening exercise a *conversazione* was given in the College, the museum and library being open for inspection. In the former a loan collection of portraits and of historic and personal relics illustrative of the history of the College and its former presidents was exhibited. On Wednesday morning Dr. T. G. Brodie, Director of the Laboratories of the Royal Colleges began a series of lantern demonstrations illustrating the work done in the laboratories. The first demonstration had reference to a research conducted by Dr. Brodie and Dr. W. E. Dixon as to the muscular and vascular mechanisms of the lungs. The investigation, in which an oncometric method was employed, studied the waves of constriction and relaxation of the bronchi, and the action of nerves and drugs on the bronchial musculature. Muscarine caused what was practically an attack of asthma, an effect produced to a greater or less extent by certain other drugs. Atropine produced an opposite effect. With regard to the effect of drugs on the vascular system of the lungs, it was found that any drug which sent up the systemic pressure by producing vasoconstriction caused congestion of the lung. Drugs which acted on the heart to produce a falling pressure relieved the circulation in the lungs if given in small doses, but in larger doses caused congestion. On Thursday a demonstration was given on the action of serum on animals with relation to the action of antitoxic serum. Dr. Brodie observed that it has long been known that the intravascular or subcutaneous injection of serum was by no means a process unattended by risk. Thus an injection of 10 cc. of the serum of the dog, cat, ox, or rabbit leads to the death of a rabbit within forty-eight hours. In studying the physiological action of serum upon the cat, Dr. Brodie found that if an animal were injected with any form of serum, including that of the animal experimented upon, a marked fall in blood-pressure, accompanied by inhibition of the heart and arrest of respiration, occurred. These results follow the injection of about 2 cc. of serum into a vein. The effect was quite absent in an animal in which the vagi were divided in the neck. The result is due to a stimulation of afferent fibers in the vagus acting upon the respiration, cardiac, and vasomotor centers in the medulla, and causing arrest of respiration, inhibition of the heart, and vasodilatation. Experiments showed that the pulmonary fibers of the vagus were those chiefly affected. The cardiac fibers are excited, but to a much less extent. In the next series of experiments it was found that the active substance in the serum was a proteid of the albumin class and not the globulin. It was coagulated by heating to 72° C. Further research showed that the serum was active only when the plasma was clotted in the presence of the corpuscles. It was clear therefore that during coagulation under usual conditions some part was played by the corpuscles. A demonstration was also made of the results of experiments carried out by Dr. Brodie and Dr. A. E. Russell, upon the origin of the fibers in the vagus which cause when excited a reflex inhibition of the heart. It was found that these fibers are not present in the vagus below the origin of the pulmonary fibers; that they are only present in quite small numbers in the cardiac fibers of the vagus, but that they are present in considerable numbers in the pulmonary branches. This was found to be true also for the superior laryngeal nerve, but not for the inferior. Their action was further illustrated by the effect of the inhalation of irritant vapor. Practically any irritant vapor acting upon the lung caused reflexly inhibition of the heart and arrest of respiration. This was found to be the case for ammonia, hydrochloric acid vapor, and chloroform, but the best effects were obtained by bromine or formic aldehyde. Section of the pulmonary branches of the lung completely abolished the effect. On Thursday afternoon in the theater of the old buildings of the University of London the President presented the diploma of Honorary Fellow to the Marquis of Salisbury, the Earl of Rosebery, and among others to distinguished American surgeons whose names appeared in the list published last week.

Obituary.—Dr. Elias S. Peabody, one of the earliest physicians to settle in Illinois, died at his home in Taylorville, Ill., July 20th, aged eighty-seven years. Dr. Peabody was born in Stonington, Conn. His father was a soldier in the Revolution, and his great-grandmother was Elizabeth Starr, said to be the first female child born in New England.

Obstetricians and Gynecologists Jealous.—The unfortunate misunderstanding which has arisen between the Obstetric Society of London and the British Gynecologic Society, in reference to the proposed meeting in London of the International Society of Obstetricians and Gynecologists is still far from a happy solution. Dr. W. J. Sinclair in the *British Medical Journal*, July 7th, offers the following solution of the difficulty: "Let the honorary secretaries of all the existing societies of obstetrics and gynecology in the United Kingdom of Great Britain and Ireland form a Convening Committee to start with. It should be the function of this committee to form a Grand Committee of the members of these societies Each of the societies could send a sufficient number of delegates to a meeting in London or elsewhere, as might be agreed, to elect an Executive Committee or to form an Executive Committee to deal with the question of an international congress and other matters. If from this movement a great comprehensive society, on the model of the German Gynecological Society, were to take shape and development, so much the better.' It is certainly to be hoped that some such plan may be adopted and harmony prevail. The two societies are making a most undignified spectacle of themselves by allowing local jealousies to interfere in a matter of international interest and importance.

The Serum Treatment of Yellow Fever.—Reports from Vera Cruz announce that Dr. Bellinzaghi is meeting with most flattering success in the administration of his serum to patients in all stages of the disease.

Woman Coroner in Kansas.—Miss Lillian E. Hall of Winfield, Kan., lately appointed Coroner of Cowley County by Gov. Stanley, has entered upon the discharge of her duties, although it has not yet been her lot to officiate at an inquest Miss Hall is twenty-six years old and a native of Cowley County. For three years she was a stenographer in the Coroner's office.

Marriage Bells at Manila.—Promptly at twelve o'clock on June 1st, as the Cathedral chimes rang out their noon hour, followed by the hundreds of Manila's old Spanish bells, Dr. Henry Page and Edith Longfellow Greenleaf, daughter of Colonel Greenleaf, Chief Surgeon of the Department of the Philippines, were united in wedlock, at the residence of the bride's parents on Calle Mozaleda. Flags representing the different branches of the service, and numerous varieties of palms tastefully arranged about the reception rooms formed the most appropriate and coolest decoration. Shortly after the ceremony the happy couple drove to the launch landing on the Pasig River and went aboard the transport "Sumner," which sailed the same afternoon for Japan.—*Army and Navy Journal.*

Organization of Cuba's Charities.—A compreprehensive decree, covering the subject of public charities in Cuba, was recently promulgated by Gen. Wood, and went into effect on August 1st. The decree creates an Insular Department of Charities, provides for a Board of Charities, and defines its powers and duties, reorganizes several local institutions as State institutions, and establishes under the Department of Charities a Bureau for Placing-Out Children. At the head of the Department of Charities is to be a Board of Charities composed of eleven members —one from each of the six provinces and five from the island at large. The members of the Board are to serve without salary and for a term of six years each after the first appointments, the first appointments being made for terms varying from one to six years. Appointments of members of the Board whose terms of office may extend beyond the period of military occupation are to be subject to the approval of the Government which shall follow. No general system of poorhouses and no system of public out-door relief is included in this decree. No general public relief system of this character has heretofore been in existence, and its establishment is deemed to be wholly inadvisable. All children who become public charges are to be cared for by the State, and are to be regarded as wards of the State. Existing municipal institutions for children, of which there are a number, are to be gradually discontinued, the children being either placed in families by the officers of the Department of Charities or removed to a central State institution. After September 1st payments to private institutions are to be made on a per-capita basis, and are to be discontinued as rapidly as the State can provide for the children in families or in its own training-schools. This course already has been successfully pursued in the case of the asylums established by the Red Cross Society in 1898 and 1899 and turned over to the insular Government in April last. Of the sixteen asylums, which had a total census of 650 in March last, twelve have already been closed, the children being provided for without difficulty, being, with very few exceptions, either placed with their relatives, or in other families. A Bureau for Placing-Out Children is established as a part of the Department of Charities. Four State institutions are provided—one for destitute boys, one for destitute girls, one for wayward or criminal boys, and one for wayward girls. Only two of these are to be new institutions. The Industrial School for Girls, established by the Military Department of Havana last year, is organized as a State Training-School for Girls. An existing reformatory, heretofore managed by the municipality of Havana, is taken over by the State, and reor-

ganized as a State Reform School for Boys. A State Agricultural School for Boys is being established at Santiago de Los Vegas, and a State Reform School for Girls has recently been opened. From all of these institutions, children, after receiving training, are to be placed-out in families by the Bureau of Placing-Out Children.

The India Famine Fund.—The New York fund for the relief of suffering in India amounted July 23d to $160,581.90.

Burning Cholera Dead.—Mr. W. Mulligan of the I. P. Jurge Tribes Mission, Johlod, Pauch Mahals, India, writes: "The death wave (cholera) is passing over. Government relief measures have been more effective of late. The neighboring States continue to pour in their incurables. Daily the huge pyre is built and dozens of bodies are reduced to ashes as the daylight fades. The fires of hell are brought to my mind. Thirty-eight bodies were being cremated as I looked at it to-day (June 23d)." This sanitary measure of cremation is gradually commending itself to the nations of the West. It has proved most salutary to the countries of India.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, August 1, 1900.

THE DECAY OF THE TEETH—ARSENIC AS AN IMPURITY OF PHOSPHATE OF SODA—THE ARMY HOSPITAL SCANDAL IN SOUTH AFRICA—DEFENCE OF THE DIRECTOR GENERAL—ROYAL COLLEGE OF SURGEONS CENTENARY—DANGERS OF CIRCUMCISION.

The report of the Committee appointed by the British Medical Association to investigate the decay of the teeth contains a large mass of statistics of which some are interesting. Those referring to children are largely based on the reports of the Committee appointed by the British Dental Association in 1890 to investigate the condition of the teeth among school children. In 4062 children aged from five to nineteen years the number of carious teeth were 10,330. Only 215 had perfectly sound dentitions. The tooth-brush was not used in the majority of cases and very few teeth were clean. But in a few schools some children's teeth were described as remarkably clean though the brush was never used. Possibly the mastication required by the tough meat supplied is the explanation. The percentage ratio of carious teeth rose from 53 at the age of six years to 271 at twelve and 300 at fourteen. The teeth of well-to-do children seemed more prone to decay than those of poor children. Examinations of children in Germany, Switzerland, Hungary and Sweden gave similar results. In Stockholm only 10.87 per cent. of the children between the ages of six and sixteen had sound dentitions. Few statistics are available as regards the condition of the teeth in adults. In 1887 Mr. Cunningham of Cambridge found that candidates at a London recruiting-station had lost on an average 3.36 teeth and had 4.09 carious teeth capable of preservation, making a total of 7.45 defective teeth per man; 64 per cent. required scaling; 70 per cent. suffered from inflamed and ulcerated gums; 27 per cent. had one or more chronic abscesses in the mouth. A report of the Army Medical Department for 1890 states that of 55,673 recruits examined 506 (or rather less than 1 per cent.) were rejected on account of defective teeth. How far is civilization responsible for the decay of the teeth? Mr. G. R. Mummery examined all the available skulls in the Royal College of Surgeons, as well as those in several private collections. The ancient British graves in Wiltshire best illustrate the condition of the teeth of the early Britons. In 68 skulls one case of decay on the proximal surface and one on the grinding surface were noticed. In 76 Anglo-Saxon skulls dental caries was found in 12. Turning to existing primitive people, the Esquimaux are almost purely carnivorous. In 69 skulls of this race the teeth were frequently much worn down on the grinding surface, but only one carious tooth was found.

An extraordinary case has just been heard in the police court in which a chemist was prosecuted for selling a drug known as effervescent phosphate of soda, used for making popular effervescent drinks, which contained in one case 8¾ and in another 3½ grains of white arsenic to the pound. The defendant pleaded that he did not know and had no reason to suspect the presence of arsenic and also that he bought the drug in the same state as he sold it and with a written warranty to that effect. Another point made by the defendant was that for some unaccountable reason no warning was contained in the British Pharmacopœia that arsenic might be looked for among the impurities of phosphate of soda. The evidence went to show that the preparation was of American origin and had been used in this country since 1871. Fortunately there was not a great sale for it. The analyst stated that the presence of arsenic in phosphate of soda was a revelation to him, but that since his attention had been drawn to it he had examined 21 samples and found arsenic in all. No doubt the poison was introduced in the sulphuric acid used in the manufacture of sodium phosphate, as arsenic is one of the recognized impurities of the acid. The magistrate decided that the defence of ignorance did not remove the legal responsibility of the defendants and only mitigated the penalty. The general guarantee of the wholesale house from whom the drug was bought, that all preparations "will stand the required tests of the British Pharmacopœia," he put aside as not sufficiently specific. He imposed a fine of $50 and $25 costs. So much for the boasted common sense of English law. The magistrate absurdly contended

that liability of the chemist was necessary for the protection of the public. It does not require much intelligence to see that the real culprits are the manufacturers. All that should be required of a retail chemist is reasonable skill and care in the sale of drugs. He cannot possibly analyze every drug he sells.

At the dinner of the Epidemiological Society, Surgeon-General Jameson, Director General of the Army Medical Department, made a very spirited defence against the recent charges of Mr. Burdett-Coutts which I have previously stated. He referred to the commendations of the Army Medical Department by Sir William MacCormac, Mr. Treves, Sir Redvers Buller, Lord Roberts, and last, but not least, by the German medical attachés, who, when asked on their return to England whether they had any improvements to suggest, replied, "We have nothing to suggest." His duty was to provide beds for ten per cent. of the 200,000 men in South Africa. He provided a personnel sufficient for those beds, over 8000 men and women. He furnished the equipment so liberally that on several occasions he was asked to send no more. He had just received a telegram, "Send no more base hospitals." War was full of matters which could not be anticipated. Could any man have prophesied that the Modder River would become full of dead Boers, some of whom had suffered from typhoid fever; that the water-supply of Bloemfontein would be cut off; that a large convoy of stores would be captured, and that the whole line of railway, 1000 miles long, would be unsecured and broken in places? Not only did the men in hospital suffer, but also the men out of hospital. Men were living on three biscuits and a pint and a half of dirty water a day. To preserve the Army it was necessary to supply food and hospital supplies had to be excluded for the moment.

Sir William MacCormac has been unanimously reelected President of the Royal College of Surgeons for the fifth time. Mr. J. Langton and Mr. Henry Morris have been appointed Vice-Presidents.

In the *Polyclinic* Mr. Jonathan Hutchinson calls attention to the dangers of circumcision. It is not easy to get at the facts which are alleged to be in most instances concealed. Some years ago a considerable group of cases of syphilitic inoculation occurred in the practice of a professional circumsizer (not a surgeon). Several were severe and more than one fatal. They were the result of carelessness. The operator was accustomed to put the removed prepuce into his box under the lint used for the next case. It is said that several infants have died within a few days of circumcision with gangrene of the penis and adjacent parts. Hemorrhage is a well-known risk of the operation performed by house-surgeons, but it does not seem to occur with Jewish operators, for they never cut mucous membrane and avoid the frenum. When mucous membrane is removed the surgeon should be enjoined to tie the frenal vessels. If he does not there may be recurring hemorrhage in a few hours which may prove fatal. Perhaps it would be an advantage if the surgical were approximated to the ritual operation, and more skin and less mucous membrane were removed, although at the cost of some neatness in the immediate result.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

TUBERCULOUS PERITONITIS—ECTOPIC GESTATION — INHALATION AND INGESTION — SPLENIC FEVER—OTITIS MEDIA—TENDON-TRANSPLANTATION—TREATMENT OF THE UMBILICAL CORD—TUMORS OF THE GENITO-URINARY TRACT—RESTORATION OF MUCOUS MEMBRANE—ARTIFICIAL INFANT-FEEDING.

Bendix at the Society for Internal Medicine in Berlin, at the meeting of June 18th, said that the agglutination of tubercle bacilli by the serum of the suspected cases of tuberculous peritonitis is a good diagnostic sign.

Litten pointed out that formerly all exudative peritonitis was called tuberculous; now, knowing that simple inflammation of this serosa may be exudative or cellular, the earlier position has been abandoned. He has noticed rheumatic peritonitis, just as rheumatism may affect the other serous membranes. Friction sounds were apparent. All the symptoms disappeared under suitable treatment, chiefly salicylates.

Baginsky said that modern surgical results have won him to have more confidence in the surgical treatment of these cases, but he still believes that many of these patients can be cured medicinally. The chief aim is as positive a diagnosis as possible. The feeling of cheesy masses is perhaps the best means of diagnosis.

Leyden said he valued the operative treatment less than he did formerly, perhaps less than many still do. He desired to make definite his views as to the various wild hypotheses as to this disease and its apparent cure by operation. The cure of a case by operation under Spencer Wells was in every likelihood an instance of mistaken diagnosis and occurred at a time when all tuberculous inflammation was regarded as fatal and when tubercular peritonitis was not recognized except at autopsy. This disease is clinically analogous to tuberculous pleurisy and like it often undergoes spontaneous cure. One difference is present, namely, the disease may involve the intestines, then giving a bad prognosis. When this similarity comes to be accepted he thought the treatment would be alike, namely, lateral puncture. He felt that laparotomy and thoracotomy both give poor results. For diagnosis, he thinks injections of animals, tuberculin reaction and serum agglutination, each open to grave error. But these all help and with a good history and physical examination, perhaps discovery of cheesy deposits, make diagnosis easy.

Fraenkel said that in the hospitals where medicinal and surgical cases can be brought to bear on this subject as adjuvants or separately, he had come to conclusions divergent from Leyden's. Tuberculous pleuritis and peritonitis are widely different prognostically. Puncture may succeed in each, often does in pleurisy, seldom in peritonitis, often does harm in peritonitis and then necessitates operation. Operation at the outset, he considers better treatment. Experimental injection of tuberculin he thought hazardous in these cases, whether new or old tuberculin be used. The inoculation of animals is the best diagnostic step.

Herzfeld, Heubner and Karewsky all defended the primary operation as treatment.

Roose at the session of the Aerztlicher Verein, in Hamburg, on June 12th, declared that no rule can be fixed as to when the operation should be done for a ruptured ectopic gestation. In some instances one must wait for the initial shock to pass off; in others one must proceed at once; in a third category it is necessary to take the patient to a hospital for the sake of good surroundings; in a fourth class the treatment begins on the spot irrespective of external circumstances.

Rieck and Kuemmell believe in early operation and prefer the vaginal approach.

Fraenkel showed slide-preparations from a case of splenic fever due to inhalation and ingestion of the germs, and reported the details of the history as follows: Male, thirty-five years of age, admitted June 5th with delirium; death and autopsy June 6th. The clinical facts are meager, being excited, active delirium and very feeble pulse, which yielded to camphor stimulation, but death came very suddenly. The autopsy peculiarities were extraordinary facial cyanosis; no peritonitis, but a turbid fluid in the abdominal cavity; at the hilum of the left lung was an enlargement of lymph-nodes to the size of an egg pressing upon the upper and anterior aspect of the root of the lung, and in addition a bilateral hemorrhagic effusion into the thoracic cavity; the upper part of the jejunum presented several dark-red, doughy hemorrhagic masses, and in the mesentery the vessels were empty, but the lymph-glands were recently swollen, dark-colored and on section hemorrhagic. The lining of the intestines presented in the neighborhood of the folds deep-red superficially-eroded enlargements with edema of the mucosa round about. Analogous areas were to be found in the stomach, still further confirming the diagnosis of anthrax. Smear preparations which gave the anthrax bacillus together with the macroscopic and microscopic features of the spleen confirmed the diagnosis. The case appeared in virtue of the distribution of the lesions clearly one of inhalation and ingestion anthrax. The fact of the poison having been inhaled was further established by the existence of a fibrinous bronchitis in the affected lung in some of the bronchi where from the false membrane the bacilli were easily obtained. Again, the spread of the disease through the stomach and the intestines also gave proof of gastrointestinal attack. The situation was cleared up by learning that the patient was a warehouse laborer and had worked among dried hides and hair. The source of the infection was therefore clear.

Schleibe, at the Aerztlicher Verein, Munich, February 14th, reviewed a case of middle-ear suppuration, distinguished for its intricacies of diagnosis and pathology. The following notes are the history in brief: Female, aged sixty-one years; diabetic; for four weeks had suffered with persistent suppurative otitis media with free discharge; admitted to the hospital complaining of constantly-increasing left-sided headache, the mastoid was opened in spite of her diabetes; the bone was not necrotic; the cells were partially filled with pus and the antrum with granulations; the sinus transversus was not inflamed or thrombosed; the wound healed quickly by granulation; persistence of the discharge; continuation and increase of the headache; no other cerebral signs; sixteen days after the operation moderate rise of temperature; slight declining pains and tenderness over the mastoid and jugular; ten weeks after the onset of the disease, four weeks subsequent to the operation, amnesic aphasia appeared for such words as "hey," although its use could be described; repetition of the spoken word, possible at first, also soon disappeared, together with ability to carry out definite directions; no further cerebral signs; fundus oculi still normal; pulse rapid; no paresis or paralysis of the eye-muscles; no disturbances of sensation or motion; spleen not enlarged; urine abundant in sugar and acetone; diagnosis, abscess of left temporal cerebral lobe, secondary to otitis media suppurativa. Exploration for pus failed, and two days later death ensued accompanied by coma and slow respiration. At the autopsy no abscess was found, but a hemorrhage, in the condition of softening, in the temporal lobe, surrounded by a large zone of broken-down brain tissue, punctate capillary hemorrhage and thrombosed pial veins; extensive inflammation and mural thrombotic deposits in the sinuses, especially in the transverse nearby to the confluent, in the sigmoid, in the petrosus inferior and in the cavernous; the jugular vein for a distance of four cm. was also similarly affected; pus in the same situations. It is remarkable that such extensive suppuration should have given so few symptoms. Chills ushered in the disease, but the temperature for four weeks had remained almost flat. There was tenderness over the mastoid, also over the vein, but no cord-like thickening of the vein. No metastases were present. The temporal bone contained one large, deeply-seated, inaccessible air-cell just beneath the sigmoid sinus, filled with and probably productive of the purulent discharge externally and of the pus internally. The pus had probably contributed to the hemorrhage also. No bone necrosis was present, as is so usual with diabetes.

Bezold, in discussing the case, said it is an

illustration of the fearful ravages a middle-ear disease may cause and of the important rôle the mastoid cells play therein.

Tausch, in discussing a paper by Lange on tendon surgery in orthopedics, said that the development of the technic of tendon-transplantation and treatment in the management of deformity is an important advance. The fixation of plaster splints produces atrophy of muscles not lamed, often results most unfavorably, and should always be replaced by a tendon operation when possible. Even in these cases he himself leaves the correcting plaster splint in only four or five weeks, then uses elastic splints, and early adds to the treatment massage, electricity, passive motion by hand or device and, finally, carefully-planned and executed walking exercises.

Moritz said the physiological explanation of the fact that the functions of the peronei can be largely made up by the tendon of the tibialis anticus, split and one-half carried to the outer border of the foot, lies in the nerve-supply. Most certainly so large a muscle as the tibialis anticus is supplied by a large group of cerebral cells, normally acting together. Under the new condition of transplanted tendon the cells gradually and to a greater and less extent accommodated themselves and compensated for the last peronei.

Rieck at the Greifswalder Medicinischer Verein, March 10th, explained a new and very successful method of treating the umbilical cord in the newly-born. Close to the navel it is tightly tied with silk and then the stump burnt down to the ligature with the actual cautery. The method shortens the healing to three or four days and prevents infection.

Busse, May 5th, exhibited a fine collection of tumors of the major urinary channels and established the conclusion that no one can estimate the nature of the growth from shreds, with definiteness, because in sarcoma, carcinoma and fibroma, the shreds themselves may be closely alike. It is the bases of the tumors which are diagnostic and not, as a rule, the papillary outgrowths. Two interesting histories were read, each of a man about fifty-five years old and afflicted for many years, in one twenty, in the other seven years. The recurrence of bloody urine became more and more frequent and, finally, the onset of severe lumbar pain brought each man to the hospital. Each had an enormous hydronephrosis. One case showed right-side lesions as follows: A very large thick-walled hydronephrotic renal pelvis which with the ureter was studded thickly with benign papillary tufts. The right half of the bladder was in a similar condition. The other patient showed the same kidney and ureter lesions, but the bladder had been invaded by a diffuse carcinoma.

Grawitz reviewed the histological details of the growth of new mucous membrane. A child had had a tracheal defect covered by a piece of cartilage taken from the sternum. Death occurred six weeks later and the remnant of the cartilage was found in a layer of dense scar. This scar was partly covered by new mucous membrane which was sending epithelium down into the crypts and crevices of a looser layer on the surface. The case demonstrates that the mucous membrane may grow from without, unlike the uterine from within and the skin in bed-sores from the sides and within. The nearer the normal mucosa the more closely did these new tissues resemble the old.

C. Fraenkel, at the Verein der Aerzte in Halle a. S., May 16th, said that all infant-feeding depends upon our knowledge of the digestive capacity of the child. The saliva lacks diastose and the gastric secretion acid; hence, the coagulation of albumin depends on rennet and there is little to combat germs which may enter with the food. In the adult this function is performed by the hydrochloric acid. Hence, it happens that food may be imperfectly digested and pass into the intestinal canal where it may set up almost any form or degree of intestinal trouble. The indications in artificial feeding are therefore an easily-assimilable, non-irritating and germ-free food. The model for all our foods should be human milk. The best substitute for this is cow's milk suitably modified. The differences between the two rest on qualitative and quantitative chemical and also bacteriological differences. Woman's milk contains (1) much less albumin than does cow's milk and, indeed, much less than the 2 per cent. formerly set down as normal. Recent careful examinations show that about 1 per cent. is the total albumin; (2) much less sugar; (3) less mineral salts. Qualitatively, the differences are still more important, because human-milk albumin is four-tenths true albumin and six-tenths casein, while in cow's milk the former is one-tenth and the latter nine-tenths. The albumin and casein in human milk are further so constituted as to be vastly more easily digestible and coagulate in fine, delicate masses. Again, a similar degree of difference obtains between the salts and the derivatives (nucleins and lecithins) which likewise deserves consideration. In about one-half the cases there are a few bacteria in woman's milk, but in cow's milk there are many. The former are commonly harmless, the latter often are pathogenic. In order to correct these differences several needs have been made (1) to make the cow's milk synthetically the same as woman's milk on the basis of the percentage of each constituent; (2) to increase the digestibility of the cow's casein, and (3) to destroy the germs in the cow's milk. For the first purpose the time-honored dilution with water is available, but according to some authorities this adds so much non-nutritious matter that it becomes an undesirable method. Accordingly, two authorities have suggested the dilution of the milk with sugar of milk. Soxhlet therefore recommends 2 parts of cow's milk to 1 part of 12 3/10 per cent. sugar-of-milk solution; while Heubner-Hoffmann advises 1 part cow's milk to 1 part of 6 9/10 per cent. solution of milk-sugar. The

lack of the proper proportion of fat in milk so changed is to be supplied by carbohydrates dynamically proportioned, but even this is not always satisfactory. The best-known standards for this are Biedert's cream-milk and Gärtner's fat-milk modifications. In order to make the cow's casein more digestible various difficult formulas for proceeding have been suggested. Theoretically these are all right and certainly founded on scientific proper basis, but are unfortunately beyond the ability of the average private family. Voltmer's mother's milk and Backhaus' children's milk are both excellent examples. The latter is especially meritorious but has the disadvantage of difficulty and expense. For the cleansing of milk various procedures have all been advocated: Greater cleanliness in producing and storing, dry-feeding, centrifugal treatment, etc. Finally, the actual sterilizing heat has been applied, both with a view to destroying the pathogenic and other germs. Since oftentimes these may be of the very resistent type which withstand actual boiling for even some time, the milk either remains infected by them or is sterilized but deprived of much of its nutrition. Nevertheless the so-called Pasteurizing of milk will render it practically sterile and still not damage its use as a food. In Scandinavia such milk is rapidly and artificially cooled, short of freezing, rendered more permanent and capable of being transported greater distances. But often in spite of both methods combined, milk will curdle in the temperature of the ordinary room in summer. The reason is that many of the germs derived from hay, animals, feces, etc., become mixed with the milk and are of the varieties which withstand for hours the temperature of boiling-water without damage.

The suggestion has been made that the sterilizing of milk on a large scale would be an advantage, when various steam apparatus would be brought into play for it. Resuming this topic at the meeting of May 30th, Fraenckel went on to say that in the actual sterilizing of milk several things must be guarded against: (1) Color and taste must be changed as little as possible. With care the degree is indeed slight to which this may go so as to be nearly without influence, but, on the other hand, it may entirely spoil the stock. (2) Flügge in a laborious article has demonstrated that milk may contain several varieties of germs which are derived from hay, feces, and potatoes, are innocuous at low, but active at high, temperatures. The "proteolytes" change the albumins into peptones and albumoses and various more or less noxious byproducts. Hence, he goes to the extreme and recommends that sterilizing be abandoned lest at any time such poisoned milk be fed to a child. But this is an exaggeration, because in many hundred observations upon this point, the author found it only five times and then noticed a taste so peculiar and bitter that any child would decline it. With this safeguard in mind sterilizing may be continued. (3) Profound chemical changes may originate through sterilizing. Albumin coagulates, fat comes out of emulsion, sugar becomes caramel, lecithin and nuclein split up, and the proportion of soluble salts is changed. On all these accounts digestibility may be impaired and various diseases initiated, scorbutus, Barlow's disease, etc. But these may arise in the breast-fed and in many clinics where carefully-sterilized milk is properly fed are seen very rarely. Hence, the changes may be absent or disregarded when suitable sterilizing is done. (4) The cost of the milk is somewhat increased, but not out of proportion to the service done and the real value of a sterile milk. Here philanthropy comes in to put into the unintelligent poor facilities for the normal feeding of their children. In conclusion, the speaker rested upon the following points: Cow's milk, from healthy animals, clean in its production and strong, suitably sterilized, then diluted in the right proportions, makes the best possible substitute for human milk. The results obtained with it are better than those obtained with any of the more ornate and complicated artificial foods. These are divisible into two great classes, the albumins and the carbohydrates. The former are made up of many which really contain milk, albumin extractives such as nutrose, encasin, sanatogen, sanose and plasmon. They may also be derived from egg-albumin and nut- and plant-albumin, among which are Lahmann's vegetable milk and Rieth's and Pfund's albumose milk. Under the catalogue of carbohydrate foods belong many of which Nestlé's, Kufeke's, Muffler's, Mellins, Theinhardt's, Liebig's and Opel's, are best known. The conversion of the starch of these into dextrin makes them more easily digestible, for the young child cannot digest starch as such. All these have their uses alike in the healthy and the sick child, but must each for itself be selected for the individual.

In the discussion Pott said the daily weight of a suckling is the only means of gauging its progress. Variations in diet according to its weight seem to be the sole means of regulating artificial feeding. While sterile, modified milk is the best single substitute for mother's milk, it must not be forgotten that Barlow's disease has been far more prevalent since its general use than before.

Klautsch said that the use of milk from certain cows gave him best results and the rubber cap for bottles devised by Ollendorf made the tightest closing device.

Fehling emphasized the fact that during lactation the milk often varies normally and sometimes within twenty-four hours he has seen great changes.

A Prolific Birth.—Recent visitors to Atlantic City will recall the aquarium tank on the iron pier and be interested in the event that occurred there this week. A fine seahorse had been captured and placed in the aquarium. During the night it gave birth to 1000 baby seahorses.

SOCIETY PROCEEDINGS.

FIRST INTERNATIONAL CONGRESS OF THE MEDICAL PRESS.

Held at Paris, July 26, 27 and 28, 1900.

[Cable Report from Our Special Representative.]

First Day—July 26th.

The first session was held in the Press pavilion on the grounds of the Exposition. The features of this first session were the addresses of welcome by the Minister of Commerce, in whose department comes the management of all the affairs of the Exposition, and the address by the dean of the World's Medical Press, Prof. Virchow, of Berlin, whose *Archives* is now approaching its sixtieth year under his continuous editorship. Prof. Virchow said it had been a desire very near to his heart from the earliest years of his medical career to see the medical editors of the world united. He congratulated the Committee of Organization in effecting at last a movement that is sure to be of the greatest service to medicine and to mankind. After the meeting the members of the Congress proceeded down the Seine in a special boat and were received by the President of the Municipal Council of Paris and the Prefect of Police.

Second Day—July 27th.

Held in the School of Medicine.

The papers of general interest were as follows:

Medical Indexes.—Dr. Marcel Baudoin, the director of the International Institute of Scientific Bibliography, discussed the subject of indexes for medical journals. Indexes should be so made that they can be consulted by any medical man no matter what language he speaks. Dr. Baudoin suggests the use of a decimal system of classification of subjects somewhat like that now in use in most libraries of the world instead of the cumbersome alphabetical system at present employed. Great improvement over the present methods in facility of consultation can be obtained by this means. There is danger that the bibliographical theorists may attempt to carry the system into too great detail and so make it impracticable.

Number of Medical Articles.—Prof. Richet of the University of Paris said that in the Index Catalogue of the United States Surgeon-General's Library about 1,100,000 titles of medical essays were enumerated. This catalogue is now twenty years old for the most part, and the number of separate medical articles has now undoubtedly risen to over 3,000,000. With the present system of classification it is impossible to consult such a list as this with any satisfaction. By using the decimal librarian system of classification the consultation could be greatly simplified. One could recall the numbers of subjects in which he is especially interested as readily as he does his telephone number. The grouping by numbers would soon be understood and the present practically insuperable difficulty be overcome.

Medical Advertising.—A very interesting discussion then took place as to the class of medical advertisements that should be admitted into the columns of a medical journal. It was generally agreed that no remedy which is advertised in the daily newspapers should be allowed space in the columns of a medical journal. When a resolution declaring that no medical journal should accept such advertising matter was proposed it was robbed of all significance by amendments. As to the question of the admission of advertisements to the "reading" columns of a medical journal, the same agreement as to the ethical theory was evident, but it was thought better to leave the matter entirely to the editor of the journal until advance in the ethical spirit shall gradually eliminate it.

Third Day—July 28th.

Medical Anonymity.—A very interesting discussion of the question whether a medical man should ever use his title of doctor with a *nom de plume* occupied the morning. There is question, at least in France, whether it is not a violation of the law regulating the practice of medicine to use any but one's real name with the title of doctor. A resolution was adopted to the effect that it was the sense of the First International Congress of the Medical Press that the laws of the different countries should forbid the use of any other name than that on the medical diploma that granted the title of doctor.

Interesting discussions were also held as to the questions of the ownership of articles that have appeared in the medical press, the duty of giving credit, etc. It was resolved that in all cases of quotation either the name of the author or the medical journal, or both, should be given, and this was construed as referring also to society proceedings and other such matter. When photographs and especially skiagraphs are retouched it was the sense of members that that fact should always be mentioned.

The next International Congress of the Medical Press will be held in Brussels next year. The date will be decided by the Bureau of Organization of the Congress of which Prof. Cornil is president and Dr. Blondel the secretary general.

The medical press of the world was very well represented at this First International Congress of the Medical Press. It was held under the auspices of the Association of the French Medical Press and practically all of the prominent French medical journals sent representatives. The Italian journals of the large cities were well represented. Virchow, Posner and Ewald of Berlin were present. Fraenkel of Vienna, Spatz of Munich, Hansen of Norway, Ehlers of Copenhagen, Tigerstedt of Stockholm, Podwyssotski of Kiev, Jannesen of Bucharest and representa-

tives of the *British Medical Journal*, the *London Lancet*, the *American Medical Journalist* and the New York Medical News.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

Held at Paris, August 2-9, 1900.

GENERAL SESSION.

First Day—August 2d.

The first general session was held in the Salle des Fêtes of the Universal Exposition. The President of the French Republic, M. Loubet, was unable to be present and sent his regrets.

President's Address.

Prof. Lannelongue, the President of the Congress, then made the opening address. He said that the large attendance was a sign of the great interest which medical matters are assuming at the present time and especially of the importance that attaches to this triennial assemblage of the doctors of the world. Here nationalities fade before the all-absorbing desire to benefit the entire human race. Only two things are asked for, freedom of research and liberty to pursue the truth. On the threshold of a new century it is at once stimulating and encouraging to find the widespread interest in things medical that exists within and without the medical profession. From being members of a guild who merely treat the symptoms of ailing humanity, physicians have now become students and scientific investigators of everything that relates to man's welfare and improvement in his health. It is only just that this improvement in the status of medical men should be acknowledged by the world in general. For the broader studies of these later times intercommunication of ideas is especially necessary if advance would be made. For this purpose such general assemblies as the present are especially important. Absolutely new discoveries are very few. What are thought to be discoveries are really the results of many small steps of progress the relations of which are not recognized until the master mind arrives on the scene to correlate and synthesize them. For rapid advance it is necessary for thinkers who are most widely separate to be in touch with one another's thoughts as well as with the completed work. They must keep themselves acquainted with the general direction of all new lines of investigation. Two things are necessary in order to make investigations into medical subjects more scientific and less liable to error. First, the more general use of instruments of precision in diagnosis, and, second, the invention of new diagnostic instruments. It is well known how liable to error are all means dependent on human sensations. The thermometer has done a great deal to make diagnosis more exact. We need new instruments that will record the condition, the shape, and the size of internal organs and so eradicate many sources of error in physical diagnosis. Our present nomenclature in the medical sciences does not represent the present state of our knowledge of medicine and besides is a source of very great confusion to the student. It is especially during a Congress like the present when authorities are assembled from all over the world that some means of correcting this very serious defect in our medical nomenclature can be considered. As President of the Thirteenth International Congress it is one of the subjects that it seems to me should especially be called to your attention.

Then Prof. Lannelongue called attention to the fact that the first International Medical Congress was held in Paris on the occasion of a great Exposition and that it was very fitting that the last International Medical Congress of the century should also be held in Paris during another great Exposition. Each one of the thirteen sessions has shown an increase in the interest manifested in the Congress, and the present one can be said to represent very completely the medical profession of the world. The success of the present Congress is due to the untiring efforts of the Executive Committee, to the good-will of the University of Paris, and to the generous and liberal-minded assistance of the Government of France.

The Secretary, Prof. A. Chauffard, next read his report which was in a large degree statistical.

Sympathy for Italy.—The Congress passed resolutions expressive of the sympathy of the delegates for a sister nation in this hour of her deep affliction. The President of the Congress sent through Prof. Bacelli a telegram of condolence to His Majesty the King of Italy. All fêtes were postponed until after the obsequies except the one at the Luxembourg on Monday, the 6th.

Attendance.—Six thousand two hundred doctors registered as in attendance upon the Congress. These were divided among the following nationalities: France, 2300; Russia, 820; Germany, 580; England, 225; and the United States, 420. The weather was cool and the daily attendance large and representative.

Professor Virchow's Address.

After the addresses of the delegates from the various countries Prof. Virchow, the father of cellular pathology and by that the great pioneer in modern scientific medicine, opened the scientific work of the Congress. His appearance on the platform, hale and hearty despite his almost eighty years, was the occasion for a most notable reception.

Traumatism and Infection.—He said that his nearly sixty years of active investigation of medical subjects gave him perhaps some right to speak before the representatives of the medical profession of the world on this much-disputed question. Even in our day the problem as to

whether the injury to the tissues or the presence of microbes is the most important factor in the production of suppuration remains yet unsettled. Since the discovery of the rôle played by microbes generally in pathological processes it has become too much the custom to attribute everything to microbes. The injury to cellular tissues by the trauma and the degenerative processes that may result therefrom are too much neglected. Fortunately a reaction has set in during these last few years and the lowering of the resistive vitality of the tissues is becoming more generally recognized as an important etiological element in permitting the establishment of suppurative changes. This question is not merely theoretic but is eminently practical and it concerns not alone the doctrine of trauma but nearly every pathological process that may declare itself in the tissues. Even matters of serious import in everyday life may be involved in the point of view taken on this question. An injury to a bone, for instance, although without the production of an open wound, may result in osteomyelitis which will require surgical relief, or, if the phlegmonous process is allowed to spread, may result in death. The medicolegal question of responsibility for the death in such cases may be a most difficult one to decide. If the injury, for example, is inflicted on the head and an abscess of the brain results, it is a very delicate question whether the inflicter of the injury is the direct cause of death. In these cases there are even eminent surgeons who claim that the small cutaneous wound made at the time of the injury may suffice for the entrance of the microbes. There are others who claim that microbes are often inoffensively present in the circulation in health, but become virulent when tissues are lowered in resistance by trauma. These considerations are evidently pure inventions and have no foundation in reality. We have had too much theory in such matters and only too often has possibility been taken for actuality by some ardent theorist who thought that the facts of Nature could be better explained by sitting down and thinking them out than by long hours of observation. More patient investigation is needed and less theorizing. Human nature is impatient and will not wait for actual results. It must be trained to wait, for unfounded theory does great harm and hinders progress. Progress is discouragingly slow. Looking back on sixty years of work, it is surprising how little advance has been made and how many times the pendulum of medical opinion has swung to and fro, now on one side, now on the other of the line that divides great medical questions.

Non-Microbic Changes of Tissues.—In the present-day rage for explaining everything as due to microbes, it is well to remember that we know a number of changes that may take place in tissues apart from any microbic influence. When an injury is inflicted, cells are often directly and immediately killed or die as the result of the injury. Now, certain changes invariably take place in these conditions. First, dead tissues can no longer retain their water; they give it up to surrounding tissues and so become inspissated. After inspissation, such changes as petrification or caseation may take place. Long ago Virchow showed how dead tissues were affected by the study of such parasites within the body as the trichina or the cysticercus. When the parasite dies, just the same series of changes are instituted in their dead bodies as if they were dead human tissue in the midst of living cells. First, they lose their water; then very often they become calcified. It was the calcified trichinæ that Leidy, the American anatomist, first described. When a human fetus dies and is retained for some reason, a corresponding series of changes take place, lithopedion, *i. e.*, a calcified fetus often results.

Direct Cell Destruction.—When poisons destroy cells there can be no question of the intermediation of microbic influence and so we hear nothing of it. It must be remembered that trauma may directly kill cells in almost the same way or may so weaken them that they die. There is no need to appeal to microbic influence as often as it is the custom to do at present. Sterile pus, that is, pus without microbes, has been shown to exist. When trauma has taken place, give its full etiological significance. Where medicolegal complications ensue from trauma, if suppuration has intervened do not appeal entirely to microbes, but weigh the question well and decide which, injury or germs of suppuration, has been of most import in the subsequent course of the case. This judicial state of mind is eminently scientific in the present state of our knowledge. Jumping to a conclusion may for the time being prove much more satisfactory, but it hinders progress instead of helping it. We cannot leap over chasms in our knowledge; we must patiently traverse them. With the scientific enthusiasm that inspires the rising generation of medical men, however, there seems every reason to hope that with the new century we are on the eve of great advance in medicine. Beware of the wings of facile theory, must be the watchword. Trust only the faithful staff of patient observation and investigation.

Prof. Pavlov, who was expected to deliver an address on "Experimental Therapeutics as a New and Fruitful Method of Physiologic Research," was unfortunately absent and the address was not delivered.

The "Moscow Prize," consisting of five thousand francs, was awarded to Santiago Ramon y Cajal, Professor of the Faculty of Medicine of Madrid. The winner of the prize is only forty-six years of age and already has an international reputation for his clinical, pathologic, and laboratory researches. The first Moscow Prize, which was conferred in 1897 at the Moscow meeting, fell to M. Henri Dunant, the founder of the Red Cross Society. The selection of M. Dunant as recipient of the prize was suggested by Prof. Virchow, President of the Russian Congress.

This prize is not awarded for theses presented, but for eminence already obtained in some department of original research.

President Loubet's reception at the Elysée Palace on Friday afternoon proved a brilliant and interesting fête. The Mayor's reception at the Hôtel de Ville Saturday afternoon, while less formal than the former, proved likewise a most enjoyable function. The Americans, both ladies and gentlemen, were in evidence in full numbers.

It was decided to hold the next Congress in 1903 at Madrid.

The Secretary's Address.—The Secretary-General, Dr. A. Chauffard, followed the President, Dr. Lannelongue, with an address in which he stated the preliminary work done and its results. Altogether 260 special reports on scientific subjects are announced and over 1200 communications on medical topics.

Dr. Chauffard called attention to the contrast between the present International Congress and the first one held in Paris in 1867. Then there were present only 333 French medical men and 589 foreigners. It is a pleasure to find among those present to-day some who were here 33 years ago; for example, Virchow, whose glory is ever young though constantly growing, and the venerated Cortejarena. The path of the wanderings of the International Medical Congress has led it through Florence, Vienna, Brussels, Geneva, Amsterdam, London, Copenhagen, Washington, Berlin, Rome, Moscow, and now finally Paris again. It has continued to grow in influence until now no one is skeptical of the great good it accomplishes in the contact of men and ideas. The present Congress promises to excel all preceding meetings in its influence on the medical world and scientific opinions. We have only to hope that it shall be a shining example to stimulate to still further efforts in the glorious work of the relief of suffering humanity.

After the Secretary the delegates from the various countries expressed the thanks of their nations for the invitations to the French capital. For Americans Prof. Osler was to have been the representative, but he was called away the day before the Congress by the serious illness of his brother. Dr. Robert F. Weir, of New York, replaced him. The Surgeon-Generals of the United States Army, Navy and Marine Hospital service were unable to be present at the Congress because of the condition of affairs in China. Major Legarde, however, represented the Army of the United States, and spoke of the stern duty that, at the Antipodes, is calling civilized nations to set their shoulders together and the pleasant duty that calls together here in Paris the medical men of the world to plan for the relief of human suffering.

Social Features.—In general the arrangements for the Congress were excellent, and as was to be expected of the French, the program of the social side of the meeting was especially well planned.

[To be continued.]

THE NEW YORK ACADEMY OF MEDICINE.—SECTION ON MEDICINE.

Stated Meeting, Held Tuesday, April 17, 1900.

The Secretary, E. Franklin Smith, M.D., in the Chair.

The Iodides in Aneurism.—Dr. Lewis F. Bishop gave a detailed report of cases of aortic and other aneurisms treated with the iodide of potassium. In all of them the subjective symptoms of pain, pressure and discomforting pulsation were greatly relieved. He said that in the midst of the many and newer methods of treatment suggested for aneurism, it must not be forgotten that the oldest remedy, iodide of potash, is also the most reliable for the relief of the annoying symptoms that made life often so unbearable for patients suffering from aneurism. The remedy has no radically curative effect, but as a palliative measure there is nothing to equal it and it should be employed freely in every case.

Gelatin for Thoracic Aneurism.—Dr. Lewis A. Conner reported three cases of thoracic aneurism treated by gelatin injections. Lancereaux's report of five cases of aneurism treated successfully by means of gelatin injections attracted the attention of the medical world. Lancereaux's experiments in this line were made as the result of the observations of Dastre and Floresco on the effect of gelatin injections in heightening the coagulability of the blood. This property of the gelatin injections has been denied by other observers and it is probable that the original observations were a mistake. This fact did not come out, however, until the injection of gelatin had been tried by a number of medical men and surgeons. Dr. Conner's three cases were under observation in the Hudson Street Hospital. None of them was successful. The cases were not under observation long enough to give data for a final conclusion, but the result seems sufficient to indicate that gelatin injection not only do no good but cause severe pain locally and often considerable constitutional reaction. Lancereaux's method was to take four to five grams of gelatin and make a solution of it in two hundred cc. of normal salt solution. This was kept for several days at a temperature of 38° C. If no cloudiness developed nor any other sign of micro-organismal growth the liquid was injected subcutaneously, usually into the patient's thigh. After about a week another injection was made and the treatment continued at regular intervals. Special directions were given by Lancereaux not to palpate the aneurism during the course of the treatment. At first the French surgeon used a two-per-cent. solution of gelatin; later, however, he used a one-per-cent. solution. He claimed that there was no pain or local reaction after the injection and no constitutional effect to be no-

ticed. Other observers, however, besides Dr. Conner did not find this to be the case.

Dr. Conner's first case was an aneurism of the descending arch of the aorta in an Italian laborer fifty years of age. There was a large pulsating tumor easily to be felt at the back. The pressure of the aneurismal tumor had caused erosion of the ribs and the pain of the erosion process was most intense. The case seemed to be one of saculated aneurism and it was in these particularly that Lancereaux claimed good results from the injection treatment. Three injections were given, but absolutely without improvement. Three days after the last injection the patient was taken with a fit of coughing in the midst of which there came a gush of blood followed by death. At the autopsy it was seen that death took place from rupture of the aneurism into the esophagus. Most careful examination of the aneurism postmortem showed that its walls were covered in part with old clots and in part were entirely bare. At no part of the aneurism, however, was there any sign of recent clotting such as might be expected if Lancereaux's theory of the increased coagulability of the blood after gelatin injections were true.

In the second case the aneurism was one of the transverse and descending aorta and of the innominate artery. There was some slight improvement of the subjective symptoms after the gelatin injection. There was considerable local reaction and no little pain. The patient was kept in bed for six days before the first gelatin injection was given and this was followed after eight days by a second injection. A few hours after the injection the temperature rose to 102.6° F. and the pain was even more severe than after the first injection. The pain caused by the other injection was so intense that morphine had to be given. Local inflammatory reaction was the rule after the injection, although this did not go on to suppuration. It mattered not whether the injection was given in the thigh or the abdominal wall, the pain was always severe, especially if a second injection was given at the same point as a previous one. Finally, the suffering became so intense after the injections as to make it unjustinable to proceed further with this method of treatment. When the treatment was begun there was a slight pulsation noticeable posteriorly. This disappeared after the second injection. The subjective symptoms also improved. The patient was seen five months later and no further progress of the aneurism was detected.

The third patient was a bartender, forty-five years of age, who was suffering from unmistakable signs of aneurism of the transverse aorta, including tracheal tugging. The first symptom of the aneurism was noticed nine years before when a high-pitched and husky voice developed as the result of a palsy of the left vocal cord. This did not increase and no other subjective symptoms were noticed. The day before his admission to the hospital an attack of spasmodic dyspnea developed which lasted for several hours. It was accompanied by very little pain, but the patient was very much frightened. He was given an injection of gelatin which was followed by very severe pain. Eight days afterward a second injection was given into the abdominal wall. This proved so very painful that morphine had to be administered. Despite the injection there was a gradual increase in size of the pulsating area and the subjective symptoms became worse. The injections were so painful that they were discontinued as it was considered that they would do no good in the case.

The experience of others, Dr. Conner said, has been like his own. Futcher of Johns Hopkins reports nine cases treated by gelatin injections. In one case there was a reduction in size of the tumor. In four cases there was marked relief of the subjective symptoms. Futcher considers that the method has some merit, but by no means all that Lancereaux claims for it, and besides it is by no means the simple painless procedure that Lancereaux claimed it to be. Dr. Conner calls attention to the fact that if Lancereaux's directions were followed the patient would be given twenty injections covering a period of five months. During all this time the patient should rest in bed. Rest, as is well known, is sufficient of itself to relieve greatly the subjective symptoms of aneurism and often does away with certain of the physical signs and even lessens the size of the aneurism.

Rupture During Gelatin Treatment.—Dr. Lewis reported a case of large sacculated aneurism of the aorta which presented as an almost fluctuating mass resembling an abscess in the anterior thorax. It had eroded its way through the sternum and ribs. Gelatin injections were given, but the local pain was very severe and there was a marked rise of temperature and also a great sense of discomfort. The second injection was followed by even worse pain than the first and by considerable local as well as general reaction. Three days later the aneurism burst externally. No autopsy could be obtained, but the aneurism was of the sacculated variety which Lancereaux claimed were especially favorable for treatment by gelatin injections. Of course, the condition of this patient was so bad that an unfavorable conclusion as to the success of this form of treatment is not justified. The local and constitutional reaction noticed, however, was sufficient to discourage further use of the method, especially as not the slightest bit of relief followed in the subjective symptoms nor the slightest improvement in the physical signs of the aneurism.

Rabies in New York City.—Dr. R. J. Wilson said that there is in some doctor's minds even yet a doubt as to the existence of rabies in this country. It is true that cases reported as rabies in the daily papers are usually other dis-

eases. But there is undoubtedly a number of cases of genuine rabies constantly occurring that should act as a reminder and a warning of our danger from the disease. During the year 1897 as far as possible every bite of an animal reported was investigated. There were two cases of genuine rabies in Greater New York, one of which occurred in Manhattan. In 1898 there were eight cases of rabies in Greater New York, three of them in Manhattan. One of these patients came from Rockland Lake and had never been bitten by an animal. She was a kennel-keeper, however, and a number of dogs had recently died in the kennels, where she was employed, from what was called distemper. The dogs had been allowed to lick her hand and this seems to have been the source of the infection. Two of the patients were bitten in New York City. This year one death from hydrophobia has occurred at St. Vincent's Hospital. The animal that inflicted the bite was killed without any investigation. While the disease is rare among human beings it is not so rare among animals. Rabies seems to be endemic in the borough of Richmond, that is, on Staten Island, where there are ideally favorable conditions for the continuation of the disease. The rabid animal is not able to leave the Island, nor to travel the long distances, sometimes 75 to 100 miles, which affected animals often traverse, before their malady assumes the violent form. During the last few years forty dogs have been sent to the laboratory of the Board of Health of New York, suffering from bites. The animals affected with the disease have come about four to six weeks apart, showing the incubation period of the disease and how the disease is carried on.

Local Treatment.—After an animal bite cauterization is usually practised and has proved by clinical and experimental observation to be a useful precaution. Dr. Park found some time ago by observations on animals that cauterization with fuming nitric acid gave better protection than the actual cautery. It is, however, much more painful and produces a worse scar and an ugly wound that heals very slowly. In human beings, therefore, it would seem that the actual cautery is preferable. An anesthetic should be employed if the wound is at all extensive, because the cauterization must be thorough to be effective. If the cautery is used within a few hours 90 per cent. of the cases will be protected. If the Pasteur treatment is applied at once over 99 per cent. of the cases will not develop the disease. If symptoms of rabies have become manifest, however, then the Pasteur treatment is without avail. It is possible to send the remedy for the Pasteur treatment under special circumstances to a distance. During the past year it has been sent from the laboratory of the New York Board of Health to Newark for the treatment of five persons and to Lancaster for the treatment of six persons. In each case it was delivered by a special messenger. The emulsion of spinal cord does not change within a few hours if the temperature is kept below 70° F. The remedy is not, however, one that it would be advisable to distribute from a central station. It is too susceptible of putrefactive change under unfavorable circumstances and, besides, it should only be administered at the hands of one who is familiar with the methods and with the effects of the remedy. If the bite of the animal has been superficial and the treatment is begun immediately, fourteen days of treatment suffice to guarantee immunity. If the bite has been on the face, or is severe, or if the treatment has been delayed, then injections should be given for from twenty-one to twenty-five days. The best place for the injection is into the loose skin over the abdomen. They are very painful. Patients who are not nervous may be able to go about their work. Dr. Wilson recently gave the injections to a butcher who was able to continue his occupation without losing a single day. Nervous patients, however, suffer very much, and nearly every one will be considerably incommoded for at least a few days during the treatment.

Prophylaxis of Rabies.—Adequate dog-laws would undoubtedly eradicate rabies. All of the bites reported at the laboratory are inflicted by worthless stray dogs. Practically none of them are valuable enough for their owners to secure a license for them. In all the history of the laboratory only two licensed dogs have ever been sent to it for investigation as to the cause of their death. If, for instance, on Staten Island, all stray dogs were shot and all other dogs compelled to wear a muzzle, within the year the Island would be absolutely free from rabies. That the making of such a law would be well worth the while, no one doubts. It would impose very little inconvenience on the population generally and it would confer a lasting benefit not only on the islanders themselves, but also on the rest of New York for whom the existence of rabies on the Island constitutes a source of danger.

New York Rabies Case.—Dr. Cronk described the case of a boy of sixteen who was treated at Gouverneur Hospital for rabies. The boy while driving a cat from his home was bitten on the fleshy part of the hand. He went to a drug-store where the wound was cauterized. Six weeks later some pain developed in the scar of the wound and he began to have strange feelings about his throat. Finally, convulsions developed in his anterior pharyngeal muscles. These convulsions recurred whenever he attempted to swallow. They gave a peculiar appearance that at times suggested that he was trying to bite. Noticing this himself he assured those around him that he had no desire to bite. There was intense salivation, which caused him to make frequent attempts at swallowing. These were always followed by convulsive movements

and a sound not unlike a bark. He could look at water and hear it flowing without any bad effect. He was thirsty, but his throat closed up, as he said, whenever he attempted to swallow. He could not take Vichy and milk, owing to convulsions that ensued. His mouth was open, his eyes staring, with fully-dilated pupils and the conjunctiva injected. His teeth were exposed by a contraction of the lips and there was flexion of the neck and spasm of the muscles. He was completely conscious and there were no true snapping movements at any time. When his head was held over a pus-basin and the saliva allowed to flow out of it his tendency to swallow was much relieved and the convulsions did not occur so often. The saliva consisted of clear mucus that flowed in a stringy stream the size of a goose-quill. Two hours after his admission palsy of the lower limbs developed and weakness gradually developed in other parts of the body. When he came in he was able to walk very well from the ambulance to his bed. The convulsive movements of his throat continued. After four hours his temperature had reached 104° F., general convulsions ensued and death took place with his temperature at 107° F. One hour after death his temperature was 108° F. The treatment employed was thirty grains of chloral and sixty grains of bromide, but they produced absolutely no effect.

St. Vincent's Hospital Case.—Dr. Lewis described the case of rabies treated at St. Vincent's Hospital during the present year. The patient was sixty years of age, an Irish laborer who presented himself at the hospital with a lacerated wound of the right face and neck. He said that he had been bitten by a large St. Bernard dog which strayed into his house during the afternoon. The dog had been taken into the yard by his children who made friends with it and the animal seemed very docile and tractable. The animal had taken water very readily and did not seem to be ill. When the patient came home from his work he had been taken by the children to see their new possession in order that he might give them permission to keep the animal. He found it with a rope around its neck, which he attempted to untie. While doing this he pressed on a wound on the animal's neck and the animal turned suddenly and bit him in the face. The animal seemed to be perfectly docile later on and allowed himself and others to approach without manifesting any viciousness. The wound inflicted was four to six inches in length, beginning not far from the angle of the mouth. It was carefully washed out and then swabbed with pure carbolic acid. There was considerable pain and, although the man returned home, he came back to the hospital next day and was admitted to the ward as an interne patient. Twelve days later he was discharged as cured. The parts of the wound sutured healed by primary union. Twenty-one days later he came back to the hospital because of certain symptoms that he had noted. He had not the slightest apprehension of developing rabies. While eating an onion one day, however, he gagged and was unable to swallow it. He attributed this to the onion and not to any difficulty in his swallowing apparatus. Two days later while attempting to take a drink of water he found that he was unable to swallow it because of a spasm in his throat. As this spasm was painful he took an aversion to water. He could eat no supper, passed a restless night and in the morning could not eat any breakfast. He went to the Pasteur Institute for treatment, but was told that the treatment would then be useless. When he came to the hospital his temperature was 98.4° F., his pulse 80, his respiration 24. He was anxious, more than hysterical, complained of thirst, had a sense of impending death, and suffered greatly from tonic spasm of the muscles of the throat. He was given bromides and nutrient enemata. Water disturbed him only when he attempted to drink. The urinary examination was negative. His mouth was dry and in contradistinction to Dr. Cronk's case there was never the least salivation. His mind remained perfectly clear to the end. There was inspiratory dyspnea and a grunting sound was made every few minutes which might have been taken for a bark. His temperature rose until the third day when it was above 103° F. There was a sudden drop of temperature on the day of his death and coma developed with a fatal termination.

Infectiousness of Saliva.—Dr. Wilson said that in the care of patients suffering from rabies it is especially necessary to take great precaution with regard to the saliva. While there are no cases on record of infection by this means, there is no doubt that the saliva carries the infectious agent of the disease. Too much care can not be taken, therefore, with regard to basins, towels, the hands of the patients, the sheets, pillow-cases, and other things that come in contact with the saliva. In every case of dog-bite that comes for treatment, the patient should be asked whether the bite was inflicted by a stray or by a known animal. If by a stray animal then the case should be suspected and for safety's sake the Pasteur treatment should be advised. In the case at St. Vincent's Hospital investigation should have been more thorough than it was, and the animal after being killed by the police should not have been carted away by the Street Cleaning Department without an investigation having been made.

Dr. Lewis said that the investigation of cases of dog-bite does not belong to the hospitals properly but to the Police Department. Every dog shot by the police because of a bite inflicted by it should be carried to the laboratory of the Board of Health. In the case treated at St. Vincent's Hospital there was absolutely nothing to arouse suspicion of the existence of rabies in an animal that had allowed children to play with

it for an entire afternoon. If the instructions issued to the police with regard to the disposal of animals they kill had been followed in this case, it is probable that this life would have been saved.

Dr. Conner recalled the fact that the pathologist of New York Hospital some years ago died of an obscure paralysis for which no reason could be found. It developed not long after an autopsy on a dog which had died from rabies and it was thought that his disease was really the paralytic form of rabies.

Digitalis as a Therapeutic Agent.—Dr. William H. Porter said that digitalis contains a number of active principles some of which are opposed in their action to others. The glucoside group of compounds, so-called because glucose can be obtained from them by certain chemical reactions, are very different to the group of compounds in digitalis which contain nitrogen and are called alkaloids. The infusion of digitalis contains digitalin and digitonin which are soluble in water. Each preparation is, however, apt to be different from others, because of freshness or variety of the leaves from which it is prepared. The powder of digitalis contains all of the active principles and the extract resembles it very much, but the extract is apt to be precipitated by the menstrum in which it is administered. There is really no such thing as a cumulative action of digitalis. There is no storing-up of the drug in the tissues with a sudden liberation of it after a certain quantity has been absorbed. There is another explanation which accounts for its anomalous action under certain circumstances It acts as a direct muscle-poison when used to its physiological limit and this leads to atonicity of muscles with sudden manifestations of symptoms. Digitalis administered to its physiological limit always acts in a manner to hurt the heart eventually. It should not be used as an ordinary heart-tonic. In lesions of the mitral valve it always does good mechanically, although its continuous use usually results in harm because of its action on the heart-muscle. In lesions of the aortic valve it never does any good. It is only of service, and even then for but a few days, when the veins are overmed and the arteries are relaxed. It then acts by toning up all muscular tissue in the vascular system and so the blood is pumped from the venous to the arterial side of the circulation. Other remedies are always needed to carry on the work which has been begun by digitalis. Nitroglycerin obviates certain of the disadvantages of digitalis, but not all. The combination of the two remedies is better than digitalis alone, but is usually not the best treatment for the patient. There are other remedies without its drawbacks. Digitalis, while usually a good diuretic, often fails to act upon the urinary secretions.

Infusion of Digitalis.—Dr. Weber said that the infusion of digitalis has always given him satisfaction. He does not use the ready-made infusion, however, but has it made to order from the English leaves of digitalis. He stops its use for a day or two after six ounces have been taken and then resumes it. He is very seldom disappointed when using digitalis in this way and thinks the infusion quite as active as the powder.

In closing the discussion Dr. Porter said that it is very easy to lay a man, suffering with aortic regurgitation, on his back by the use of digitalis. It is of use only where venous engorgement exists. We do not need to appeal to observation on animals to prove this. Enough experiments have been made on the human subject to justify this conclusion. Dr. Porter has seen acute dilatation of a most intense character develop as the result of the administration of digitalis in aortic disease. The patient was not even able to raise himself in bed for six weeks and it was only by the aid of other cardiac tonics that he was successfully brought back to his original condition. The action of digitalis always heightens the speed of the circulation in the coronary arteries and so permits less time for the nutrition of the heart-muscle. This is a serious danger that is ever to be kept in mind.

The tincture of digitalis when made from the fresh leaves is the most certain preparation that we have. Many tinctures that are on the market are absolutely worthless because they are made from old leaves. There was an old druggist here in New York whose tincture of digitalis was famous for its strength and uniformity. The old gentleman used to go down to the dock when a vessel was announced bringing digitalis leaves, and make his tincture of digitalis for the year all at once from the fresh leaves.

REVIEWS.

Essentials of Diagnosis. Arranged in the Form of Questions and Answers Prepared Especially for Students of Medicine. By Solomon Solis-Cohen, M.D., Professor of Clinical Medicine and Therapeutics in the Philadelphia Polyclinic, etc., and Augustus A. Eschner, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic, etc. Second Edition, Revised and Enlarged. Philadelphia W. B. Saunders, 1900.

The rapid appearance of the second edition of this work is sufficient evidence of its popularity. It contains in a remarkably clear and concise manner the important points in the diagnosis of most internal disorders and will continue to be of value to those whose time does not permit the study of more voluminous text-books. Considerable stress has been laid upon the physical diagnosis of diseases of the lungs and heart. A thorough revision brings the subject matter well up to date.

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ORIGINAL ARTICLES.

THE TREATMENT OF ACUTE ALCOHOLISM BY LARGE DOSES OF DIGITALIS.[1]

By HENRY P. LOOMIS, M.D.,
OF NEW YORK.

SUGGESTIONS for the use of large doses of digitalis in the treatment of acute alcoholism came from Sweden and England. Fothergill and Jones of Jersey, England, were the first to introduce its use to the medical profession. Both recommended it very highly. The latter publishes a report of over seventy cases treated by this method alone. He claims that he never saw any alarming symptoms following the use of one-half-ounce doses of the tincture. A few clinicians in this country have tried the remedy with varying success, among them Dr. Horatio C. Wood of Philadelphia who speaks highly of its effect in a certain class of cases. It is interesting to note that a drug, the use of which even in moderately-large doses is supposed to be fraught with some danger, can be given in one-half-ounce doses without producing any of the ordinary symptoms of digitalis-poisoning. Various explanations have been offered to account for the tolerance of these enormous doses. Wood believes that its explanation lies in the fact that the heart has become by long habit very much benumbed to the influence of stimulants, and explains the narcotic effect of the drug by the fact that the rest and sleep which follow its use are not the result of the cardiac stimulation, but are principally due to the increased flow of blood to the nerve-centers. Others have explained its effect by the digitalis controlling the arteries and compare its action to the effect of ergot in hemorrhage.

All investigators agree that in acute alcoholism there is singular tolerance for this remedy and the majority believe that it can be used in these large doses with but little danger. Ringer, in an extensive discussion of the use of this remedy in acute alcoholism, recommends it highly and closes his article with these words: "It remains to ascertain the form of the disease amenable to digitalis."

While this remedy has been used quite extensively in England it has had no extensive trial, so far as I am able to ascertain, in this country. During the past spring, while on duty as attending physician to the alcoholic wards of Bellevue Hospital, I used the tincture of digitalis in one-half-ounce doses in a series of ten cases, representing acute alcoholism. The cases were selected so as to include different classes of individuals—the strong and robust, the weak and the anemic, the young and the old, those with nephritis, and those with surgical complications. In the treatment of these cases of delirium tremens a routine practice was followed. They were ordered one-half ounce of tincture of digitalis, to be given every four hours for three doses. If the patient became quiet and the delirium disappeared, the remedy was stopped before the third dose. If not, another series of three doses six hours apart is ordered. In the cases that showed the best results not more than three doses were necessary. The guide to the repetition of the doses was its narcotic effect. No marked dropping of the pulse was noted in any of the cases, but in the successful ones the pulse was seen to be increased in force, fuller, stronger, and more regular after the first dose. The cold, clammy perspiration disappeared, the skin became warmer, and the patient went to sleep. No effect of the remedy was noticed on the kidneys as shown by the usual secretion of urine.

In only three of the ten cases was the result so pronounced and so quick that there seemed to be no question that it was entirely due to the effect of the digitalis. In some of the cases the remedy was an absolute failure. Two of the patients died. Autopsies were made in both. Beyond the wet brain of acute alcoholism, there was not any lesion found in one case. In the other case, which died in convulsions, in addition to edema of the brain, petechial hemorrhages were found beneath the endocardium. I have always felt that possibly in this case the digitalis had something to do with the cause of death, although it was a desperate case complicated by acute articular rheumatism. Still, the man was a robust individual thirty years of age.

The following case is one of those in which the digitalis shows its most beneficial effects. A young man, well-nourished, robust, twenty-two years of age, entered the alcoholic wards late one afternoon, showing all the symptoms of a severe delirium tremens of two-days' standing. Temperature, 101° F.; pulse, 102; respiration, 24. He was ordered during the first night one-half ounce of the tincture of digitalis at 9, 1, and 5. He did not sleep during the night and had to be restrained. The next morning at 9 o'clock the temperature fell to 99.5° F., pulse to 100 and respiration to 24; the patient became quiet; delirium disappeared, and he went to sleep. He slept all that day with the exception of about three hours during which he had to be restrained. He received no more digitalis and during the next

[1] Read before the Section on Materia Medica and Therapeutics American Medical Association, Atlantic City, June 12, 1900.

night his sleep was unbroken. The following day he was perfectly rational and in the afternoon left the hospital. Ordinarily such cases, even when under the best treatment, are not discharged before the third or fourth day.

The second of the successful cases was a man of robust build, thirty-two years of age, who entered the ward with alcoholic delusions. At the end of twenty-four hours he developed delirium tremens and had to be restrained. During the next twenty-four hours the ordinary treatment of narcotics was followed with no effect. Temperature 103.2° F.; pulse, 108; respiration, 30. He was put on tincture of digitalis, half-ounce-doses, every four hours. After four doses his temperature was 99.4° F.; pulse, 106; respiration 24; he was more quiet but still delirious. A second series of three half-ounce doses of digitalis, each four hours apart, was ordered. After the second dose the patient went to sleep and slept almost continuously for twenty-four hours. He left the hospital the following day.

It is needless to report the other cases in detail, but, as a result of studying the carefully-kept records of these cases and from my personal experience in the use of the drug a year ago in six cases, I would state the following as my conclusions: (1) The indiscriminate use of large doses (half an ounce) of digitalis in acute alcoholism is fraught with danger. (2) The kind of cases in which it should be given are the strong, robust patients in early life, suffering from no complications, and with violent delirium. In these cases the result, I believe, will be exceptionally favorable. They become quiet, go to sleep with a certainty and promptness that is not obtained by any other methods with which I am familiar. (3) If after three doses no narcotic effect is noted, I would not advise a continuance of the remedy. I believe in the above class of cases it can be used with perfect safety for a limited number of doses. (4) The failures in my cases were in chronic alcoholic subjects, in middle and advanced life, in anemic individuals with bad nutrition. (5) One fact noted in the cases which showed marked results from the treatment was that when they recovered and awoke from their sleep they were in such good condition that they were able to leave the hospital at once. This is an unusual experience as ordinarily convalescence is delayed for two or three days.

Case I[1].—G., aged thirty-eight, poorly nourished, entered the hospital with acute alcoholism. Two days afterward developed delirium and was transferred to the alcoholic ward. Temperature, 102.4° F.; pulse, 84; respiration, 20. For two days tincture of digitalis every four hours was given without effect. Patient noisy, delirious and unable to sleep. On the third day the digitalis was increased to half an ounce, but no results were noted. Digitalis was stopped and the patient was put upon bromide-and-chloral mixture without any effect. Twenty-four hours after the digitalis was discontinued. The patient died in convulsions. Autopsy showed no lesion with the exception of edema of the brain.

Case II.—S., aged twenty-two, well nourished, robust. Already reported.

Case III.—Male, aged thirty-two, strong, robust, delirium tremens following alcoholic delusions. Already reported; favorable result.

Case IV.—A., exceedingly wild, unable to sleep. Three half-ounce doses of tincture of digitalis were given four hours apart. No effect was noted on the temperature. Respiration and pulse which had been weak and soft, became of high tension. As the delirium increased and no benefit was noted at the third dose, the digitalis was stopped, The patient recovered at the end of five days without any treatment.

Case V.—M. G., aged forty, old rounder, poorly nourished. Entered with delirium tremens and fracture of the arm. Four half-ounce doses of digitalis were given without any effect. Patient died in convulsions six hours after the last dose. This case was a bad one and it is hardly fair to consider that the digitalis had anything to do with the death.

Case VI.—L., aged twenty-five, robust, well nourished, very severe case. Wildly delirious; after four doses of the tincture of digitalis four hours apart, the pulse, temperature and respiration dropped from 102° to 99° F., 108 to 100, 26 to 24, but the delirium still continued. Slight improvement in the patient's general condition being noted the digitalis was continued for two more doses. The patient quieted down and went to sleep and slept for nearly twenty-four hours. This was one of the successful cases.

Case VII.—L., aged thirty, anemic, poorly nourished, chronic Bright's disease. After forty-eight hours of treatment by bromide-and-chloral mixture and hypodermics of morphine and hyoscin no effect was noted. The patient was then put on four half-ounce doses of tincture of digitalis. He went to sleep and slept for twelve hours. The patient became worse and temperature rose to 105° F. He finally died after another twelve hours. This was a desperate case and death was easily attributable to his run-down condition.

Case VIII.—M., aged sixty, chronic alcoholic, badly nourished, renal complication. Delirium tremens developed in this case after being in the ward twenty-four hours. Five half-ounce doses of tincture of digitalis were given in this case and no effects were noted. The patient died thirteen hours after the last dose. Pulse dropped before death to 48. Digitalis was a complete failure in this case.

Case IX.—G., aged forty. This case was badly nourished; was transferred from surgical ward with a broken arm, suffering from severe delirium tremens. Three half-ounce doses of the tincture of digitalis were given, but with no result. The patient remained delirious and noisy.

[1] I am indebted to my house-physician, Dr. D. Metcalfe Polk, for carrying out with painstaking care the details of this treatment and furnishing me with accurate histories of the cases.

He recovered from his delirium tremens at the end of forty-eight hours. He received no narcotic.

Case X.—G., aged forty-five, hard drinker, well nourished; robust; albumin in urine. Acute delirium tremens. Bromide and chloral given followed by morphine and hyoscin with no results. After being in the hospital twenty-four hours he was given half an ounce of tincture of digitalis for four doses. After the fourth dose the patient became quieter. Pulse under digitalis fell from 130 to 108. The patient became quieter and slept, although no more digitalis was given. At the end of twenty-four hours he was up and about the ward; in another twenty-four hours he left the hospital.

SUBSEQUENT HISTORIES OF PATIENTS APPARENTLY CURED UNDER ADMINISTRATION OF ANTITUBERCLE SERUM AS AN AUXILIARY TO CLIMATIC TREATMENT.

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At the annual meeting of the American Climatological Association in 1898 I had the honor to present a paper entitled "Some Statistics Upon Serotherapy in Tuberculosis." In the conclusion of that paper thirty-six incipient cases were reported which, under antitubercle serum, as an auxiliary to climatic, treatment, showed 39 per cent. apparently cured. Fifty-five per cent. were generally improved, as evidenced by decrease in tubercle bacilli, expectoration, and cough, by increase of weight, strength, and appetite, and by more or less improvement in physical signs of disease. Of this 55 per cent. 9 per cent. may be fairly declared arrested cases. There were also reported forty-two moderately-advanced cases treated in like manner in which the bacilli decreased in 30 per cent., weight gained in 61 per cent., and in between 71 per cent. and 85 per cent. a marked improvement of all other symptoms was shown. One apparent cure was noted in this class. Four far-advanced cases were reported, showing general improvement of physical signs, appetite, cough, and expectoration in 25 per cent. and increase of weight in 50 per cent. No decrease in bacilli or apparent cures were noted among this class.

Summarizing the three classes of cases reported, it was shown that eighty-two patients were treated with the following results:

Number of cases treated	82
Expectoration decreased in	82 per cent.
Appetite improved in	81 per cent.
Weight gained in	78 per cent.
Physical signs improved in	78 per cent.
Temperature decreased in	49 per cent.
Bacilli disappeared in	13 per cent.
" decreased in	35 per cent.
Cough decreased in	79 per cent.
Apparent immunity established in	21 per cent.
General improvement in	78 per cent.

In closing the paper the writer said as follows: "I wish to place myself distinctly on record as not being, as yet, a thorough convert to serotherapy in the treatment of tuberculosis; I appear before you simply as an investigator of this subject; I believe that we are investigating along the right line; that the results of serum treatment are, as a whole, more satisfactory than treatment by any one drug; but as yet we have found no specific for this dread disease."

In pursuance, therefore, of investigation and study of this subject, it may be of interest to hear of the present condition of those patients reported two years ago, as comprising the 39 per cent. apparently cured, as well as the present condition of eleven whose histories were not included in the former paper. There was a total of fourteen patients comprising this 39 per cent. reported. It has been possible to trace and obtain accurate histories of only nine, but in addition to these, the remaining five are known by general repute to be in the same condition as when they were discharged; we have no knowledge of any relapses. Those whose histories have been traced, numbering nine, are divided into two classes, representing respectively those who have been discharged three years and two years.

Four have been away for three years, and their histories are as follows:

Case I.—On admission to the Sanitarium showed signs of incipient tubercular involvement down to the second interspace anteriorly and to the spine of the scapula posteriorly on the right side; the examination of the sputum showed numerous tubercle bacilli, with mixed infection. Serum was administered for six weeks in Liberty, then the patient returned to New York City and the injections of serum were continued for five weeks longer. Shortly after returning to his old environment, the tubercle bacilli disappeared, the patient gained seven pounds in weight, and was apparently cured. During three winters he has been constantly at work. His present condition is excellent; there is neither cough nor expectoration, and the physical signs in his lungs are negative. The patient has lost four pounds since returning to work, leaving a net gain of three pounds.

Case II.—Entered the Sanitarium suffering from incipient tuberculosis; no tubercle bacilli were present in the sputum. Serum was administered for three months. Patient gained fifteen pounds in weight, and was apparently cured when she returned to her old environment, where she has been at work for three years. Her present condition is excellent; there is neither cough nor expectoration; physical signs in her lungs are negative; and the patient has gained ten pounds since returning to work.

Case III.—Entered the Sanitarium with incipient tubercular involvement at both apices; numerous tubercle bacilli were present in the sputum. Serum was administered for four months at the Sanitarium, and for one month

after the patient returned to New York City. The tubercle bacilli disappeared after four weeks' treatment; the patient gained forty pounds, and was apparently cured when discharged from the Sanitarium. This patient has been at work for three years. She had an attack of the grip last summer; at present she is anemic; has neither cough nor expectoration; the physical signs in the lungs are the same as at the time of discharge, *viz.*, slight dulness at right apex. There has been a loss of twenty of the forty pounds gained here, her weight now being normal.

Case IV.—Entered the Sanitarium with incipient tubercular involvement of the right upper lobe. The examination of the sputum showed a few tubercle bacilli with mixed infection. Serum was administered for two months and a half. The patient gained ten pounds in weight, the bacilli disappeared, and she was apparently cured when discharged from the Sanitarium. This patient has been at home for eighteen months, and her present condition is excellent; physical signs in the lungs are negative, and there is neither cough nor expectoration.

Five patients have been away for two years, and their histories are as follows:

Case I.—Entered the Sanitarium with incipient tubercular involvement of both upper lobes, and a moderate number of tubercle bacilli present in the sputum. Serum was administered for six months. Tubercle bacilli had disappeared, the patient had gained five pounds in weight, and was apparently cured when discharged from the Sanitarium. She worked in New York City for fifteen months, and then returned for the purpose of entering the Nurses' Training School at the Sanitarium. Her present condition is excellent; the physical signs are negative; weight is stationary; cough and expectoration, due to chronic bronchitis, are still present. The tubercular process in this case was engrafted upon a bronchitis of many years' duration.

Case II.—Entered the Sanitarium with incipient tubercular involvement of the right upper lobe; a moderate number of tubercle bacilli and mixed infection were demonstrated in the sputum. Serum was administered for six months. Tubercle bacilli disappeared, the patient gained eight pounds in weight, and was apparently cured when discharged two years ago. This patient also entered the Nurses' Training School at the Sanitarium immediately after she was discharged. She has spent four months in New York City, in hospitals, training as a nurse, with long irregular hours, and of course in a comparatively unhealthy atmosphere. Her present condition is excellent; physical signs in the lungs are negative; there is neither cough nor expectoration, and her weight is stationary.

Case III.—Entered the Sanitarium with incipient tubercular involvement of both upper lobes; no tubercle bacilli could be found in the sputum. Serum was administered for one month; patient gained five pounds in weight; he has lived in his old environment for twenty-one months; his present condition is excellent; physical signs in the lungs are negative; there is neither cough nor expectoration; the patient has gained nine pounds since returning home.

Case IV.—Entered the Sanitarium with incipient involvement of the right apex; tubercle bacilli were demonstrated in the sputum. Serum was administered for three months and a half. Tubercle bacilli disappeared, the patient gained nine pounds in weight, and was apparently cured when discharged from the Sanitarium. He returned to his old environment, but engaged in out-door instead of in-door work. His present condition is excellent; signs in the lungs are negative; he has neither cough nor expectoration, and has gained seven pounds since returning to work.

Case V.—Entered the Sanitarium with incipient tuberculosis; tubercle bacilli were demonstrated. Serum was administered for seven months at the Sanitarium, and continued for six weeks after the patient's return home. Tubercle bacilli had disappeared, and the patient was apparently cured when discharged from the Sanitarium. This patient has lived at her home for twenty-two months; she had an attack of the grip last winter; her present condition is good; the physical signs in her lungs are the same as on discharge—slight consolidation at the left apex; there is neither expectoration nor cough, and the patient has gained two pounds in weight since returning home.

In addition to the five patients reported as being away for two years, I wish to report an apparently cured case from among the moderately advanced class.

Case VI.—Entered the Sanitarium suffering from tuberculosis, in the moderately-advanced stage, at both apices; a moderate number of tubercle bacilli were demonstrated. This patient showed also tubercular involvement of the throat, evidenced by infiltration of the interarytenoid space, and a tubercular ulcer in the trachea. Serum was administered for five months at the Sanitarium, and for a short time after her return to New York City. The larynx and trachea received local treatment, which did not differ in any respect from that employed in New York City. Tubercle bacilli disappeared, the trachea and larynx resumed their normal conditions, the patient gained ten pounds in weight, and was apparently cured when discharged from the Sanitarium. This patient has spent two winters in New York City, going away for the summer months; she has had one attack of the grip and one of pneumonia since returning home. Her present condition is good, physical examination of the lungs shows a fibroid condition at one apex, and a slight amount of bronchitis; expectoration and cough are slight; weight remains about stationary; tubercle bacilli have never been found in the sputum, although specimens have been frequently examined, since the patient left the Sanitarium.

In addition to these apparently cured cases of two and three years' standing, I wish to report

those who have been discharged for a year or less, and who have spent at least one winter in their old environment. Six were treated in the Sanitarium, and seven in private practice, making a total of thirteen patients. Of these thirteen the subsequent histories of nine have been traced definitely, and are as follows:

Case I.—Entered the Sanitarium with incipient tubercular involvement of the right apex; no tubercle bacilli were demonstrated. Serum was administered for five months. The patient gained seven pounds in weight, and was apparently cured when discharged; he spent last winter in his old environment; his present condition is good; there are signs of slight fibrosis at the right apex, but no cough or expectoration. Patient has gained two pounds since returning home; he has been away from the Sanitarium for nine months, two of which have been spent in travel.

Case II.—Entered the Sanitarium with very incipient tubercular involvement, and tubercle bacilli were demonstrated in the sputum. Serum was administered for nine months. The bacilli disappeared, the patient gained nineteen pounds in weight, and was apparently cured when discharged. She has lived in her old environment and been at work for about seven months. Her present condition is excellent; the physical signs in the lungs are negative; there is neither cough nor expectoration, and her weight remains stationary.

Case III.—Infiltration at right apex; tubercle bacilli moderate in number. Serum was administered for four months, the dose being 40 minims; no reaction. Bacilli disappeared, the patient gained twenty-one pounds in weight, and was apparently cured when returning to old environment, where she remained from October last to February of the present year, when she returned to Liberty. Her present condition is excellent; fibrosis established at the right apex; slight cough and expectoration still present, but without tubercle bacilli; weight is now stationary.

Case IV.—Infiltration at the right apex, at the base of the left lung, and at the left upper lobe; tubercle bacilli few in number. Serum was administered twice a week for two and a half months, the dose being 45 minims; no reaction. Tubercle bacilli disappeared, the patient gained eighteen pounds in weight, and was apparently cured when he returned to his old environment and work, where he spent one winter and summer. Last winter he spent in the South, where he went on business. He has been away from Liberty for fifteen months. His present condition is excellent; physical signs in the lungs are negative; there is neither cough nor expectoration present, and the weight remains stationary.

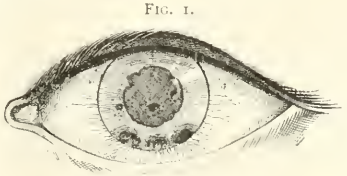
Case V.—At the beginning of treatment there was infiltration at the right apex and tubercle bacilli, moderate in number, were found in the sputum. Serum was administered for three months, the dose increased to 50 minims daily; no reaction. Tubercle bacilli disappeared, the patient gained fifteen pounds in weight, and was apparently cured when he returned to his old environment, where he has been for eleven months. His present condition is excellent, the only physical sign remaining is slightly jerky respiration; there is neither cough nor expectoration, and his weight remains stationary.

Case VI.—The first examination revealed infiltration at the left apex, and consolidation of the right upper lobe; tubercle bacilli were not present. Serum was administered on alternate days for four months in Liberty, the dose being 30 minims; no reaction. The patient gained two pounds in weight, and was apparently cured when returning to his old environment, where he has been for six months, and where he still receives one injection of serum a week. His present condition is good; there is left only slight muffling of the respiratory murmur; there is neither cough nor expectoration, and the weight remains stationary.

Case VII.—There was slight infiltration at the right apex; no tubercle bacilli were demonstrated. Serum was administered for four months in Liberty, the dose being 15 minims; one reaction accompanied by a rash. The patient gained sixteen pounds in weight and was apparently cured when she returned to her old environment, where the serum was administered for one month, and where she remained for three months, and then returned to Liberty to spend the months of March and April. Her present condition is excellent. Auscultation reveals signs of scar at the right apex posteriorly; there is neither cough nor expectoration, and the patient continues to gain in weight.

Case VIII.—Showed infiltration at the right apex, but no tubercle bacilli were found. Serum was administered on alternate days for five months, the dose being 25 minims; one reaction occurred. The patient gained seven pounds in weight and was apparently cured at the time of leaving Liberty. Her present condition is good; physical signs in the lungs are negative; there is neither cough nor expectoration, and she has gained six pounds since returning to her old environment.

Fig. 1.



Tubercular Kerato-iritis.

Case IX.—This patient I have introduced here, not because she is, as yet, apparently cured, but on account of an interesting ocular complication. Before coming under my care this patient developed tubercular kerato-iritis, evidenced by three foci of infection as shown by the accompanying diagram (Fig. 1), kindly loaned to me

by Dr. E. S. Thomson of New York City. The patient was sent to me for the purpose of determining whether there was a tubercular condition present in the lungs which might be considered as the primary focus.

Dr. Thomson's history of the case is as follows: "On June 1, 1899, the patient noticed that the left eye was failing in vision and getting a little red and watery. She consulted several oculists, and finally came to the clinic at the Manhattan Eye and Ear Hospital. She was treated with atropine and hot water applications, locally, and mercury followed by iodide of potassium internally for two months, at the end of which time there was no improvement either in acuity of vision or in the inflammatory symptoms. She then came under the writer's care, and a diagnosis of tubercular kerato-iritis was made. There were at the time several grayish infiltrates in the substance of the cornea, and three grayish nodules springing from the iris near the filtration angle below. These nodules were perfectly characteristic in appearance of tubercle. The multiple character excluded sarcoma. The two months' treatment with antispecifics, which was entirely without effect, was a strong argument against condyloma, as will be appreciated by those who have seen condyloma of the iris disappear in two or three days under mercury, as it commonly does. Condyloma commonly appears at the pupillary margin, is surrounded by dilated blood-vessels, and causes a violent reaction in the affected eye. In the case cited the nodules were grayish and cheesy-looking, and the whole process was a subacute, indolent one. Vision was 4/200. On account of the local condition, the patient's lungs were examined by Dr. Stubbert, and she was sent to Liberty and placed under treatment August 25th. On October 5th she came to the city for a few days. The only local treatment she had had was atropine and hot-water applications. Her general health had improved; there was less ciliary redness, and the nodules had come forward from the substance of the iris and were lying partly in the anterior chamber against the cornea. Vision was 20/200. Dr. Roosa, who was then consulted, confirmed the diagnosis and advised calomel locally. During the next seven months she came to the city about every six weeks and stayed five or six days at a time, having calomel dusted into the eye once a day. There was a gradual improvement during all this time. One nodule had entirely gone by December 14th. The others were gradually separated from the iris, and all that now remain, June 1, 1900, are two thin cicatrices on the posterior surface of the cornea near the filtration angle. There are numerous new blood-vessels coursing through the cornea on all sides of these cicatrices. All of the corneal nodules have cleared up, leaving slight opacities, except one which seems still to have a little acute infiltration around it. The eye is perfectly white and free from inflammation. The pupil is still dilated, and the vision is 20/100. There has never been any pain and what slight photophobia there was has entirely passed away. The improvement in her eye has gone hand in hand with the improvement in her general condition, and it goes without saying that the former must be largely due to the latter. The local treatment was only antiseptic and soothing. It was very noticeable that the eye showed unfavorable symptoms whenever her general health failed a little. Each time there would be an increase of the redness and the cornea would become more cloudy. As she recovered her normal tone the eye would again quiet down. While the eye cannot as yet be regarded as entirely cured, it seems not too much to say that the process has been arrested and will probably continue to clear up."

In addition to the history cited by Dr. Thomson, I found the patient's lung condition as follows: Slight consolidation of the right upper lobe; no tubercle bacilli in the sputum. Serum has been administered on alternate days for seven months, the dose being 25 minims, and the patient is still under treatment. There occurred one reaction, accompanied by a rash and rheumatic symptoms. Before beginning the administration of serum, this patient had been in the Schawangunk Mountains, near Liberty, without improving; on the contrary, the condition of her eye had been growing progressively worse. The patient's general condition is very much improved; she has gained six and three-quarters pounds in weight; the physical signs in her lungs are as follows: Slight infiltration to the second interspace anteriorly, and to the spine of the scapula posteriorly on the right side. She has neither cough nor expectoration, and continues to gain in weight.

As a study of the possibility of keeping under control an active process which, in the old environment and without treatment, we have every reason to believe would advance progressively, I wish to quote three arrested cases, as follows:

Case I.—Entered the Sanitarium with slight consolidation of the right upper lobe. When discharged she showed a fibrosis surrounding a small cavity from which, at long intervals, is discharged a small amount of secretion containing tubercle bacilli. During the intervals between the expectoration there is no cough. The patient holds her own in weight, general condition, and physical signs, and has returned to her old environment and work.

Case II.—Left the Sanitarium in an improved condition, but with tubercle bacilli present in his sputum, which have disappeared since the patient returned to his old environment, and while engaged in unhealthy employment.

Case III.—Had a small number of tubercle bacilli in his sputum when he left the Sanitarium, but these subsequently disappeared while the patient was living in his old environment, and engaged in his former work.

These three cases, when they left the Sanitarium, were, barring the presence of tubercle

bacilli, arrested cases, as far as physical signs and general condition were concerned.

Résumé.—We know positively that of those discharged apparently cured three years ago, 11 per cent. have remained cured; two years ago, 14 per cent. have remained cured; and 69 per cent. have remained cured of those who have spent at least one winter in their old environment.

Conclusions.—The reports of cases of tuberculosis treated with antitubercle serum under unfavorable climatic conditions are comparatively meager, but as far as they go the results seem to have been unsatisfactory. Therefore, it would seem as though, instead of a hoped-for specific, we have in antitubercle serum simply another auxiliary to climatic, hygienic, and dietetic treatment. Its comparative greater merits as such an agent in the treatment of cases in the incipient stage seem to place it ahead of all other recognized agents in a large majority of instances. Its greater value may not be so well demonstrated in its immediate effects, as in the fact that, *apparently,* there is established an immunity, the duration of which is as yet not determined, and can only be measured by years of observation.

In this connection it may be noted that among patients apparently cured while taking creosote, as an auxiliary to climatic influences, a few instances of relapse have occurred. Finally, the results of two years' further study of the subject would seem to indicate: (1) Further confirmation of the conclusions of the preliminary paper in 1898. (*a*) The use of serum does not tax the functions of digestion or produce gastritis, diarrhea, or loss of appetite. (*b*) In cases wherein bacilli have disappeared, they have been lost while the sputa were still present, whereas in creosote cases the last specimens of sputa still contain bacilli. (2) Immunity seems to be established in apparently cured cases, capable of protecting the patient effectually in his old environment at least two years, and *perhaps* for a longer period. (3) The fact that cases for treatment must be selected, even among those in the incipient stage, and that it is less effective in low altitudes and city environment, conclusively ranks antitubercle serum among the auxiliaries to climatic treatment of phthisis, rather than as a specific.

ACUTE ANTERIOR POLIOMYELITIS.[1]

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In acute anterior poliomyelitis, the familiar infantile spinal paralysis, we have a disease meriting the attention of both the neurologist and the general practitioner of medicine. For the latter it possesses probably the greater interest, since in its earlier stages it is most often seen and treated by him, coming under the observation of the neurological specialist only at a later stage and in its chronic form, when the hope of cure is comparatively small. It is the belief that a review of some of the practical aspects of the disease as it is met with in Alabama, its nature, frequency, symptomatology, diagnosis and treatment, may prove interesting and not unprofitable to the members of this Association, which has encouraged me in the preparation of this paper.

This poliomyelitis, then, to which I ask your attention is an acute, under some circumstances seemingly infectious bacterial disease, presenting in its initial stages the clinical features of an acute germ invasion quickly followed by atrophic paralysis of associated muscle-groups in one or more extremities, the characteristic nervous symptoms being dependent on pathological alterations in certain of the peripheral motor neurons, and in anatomically-related structures of the anterior gray horn of the spinal cord.

Whether the degeneration in the motor nerve-cells be the primary lesion or a secondary effect of inflammation in the extranervous structures is one of the undetermined problems in neuropathology, and one which, being of little practical importance, need not detain us here. Another point in the pathology of the disease upon which investigators are not agreed is whether the micro-organisms causing poliomyelitis are specific, that is, produce poliomyelitis and nothing else, or whether the affection is a result of the invasion of bacteria which may under different circumstances incite other forms of disease. No specific germ has yet been isolated and, in the light of our present knowledge of the subject, my own opinion is that the latter view is more nearly correct. As bearing upon this point a recent investigation into the etiology and pathology of poliomyelitis made by Auerbach of Frankfort-on-the-Main deserves mention. After a clinical study of fifteen cases of the disease, supplemented by examination of the cerebrospinal fluid withdrawn by lumbar puncture, Auerbach reaches the conclusion that the most frequent cause is the Weichselbaum-Jäger meningococcus, and that the difference between cerebrospinal meningitis, some forms of cerebritis and acute anterior poliomyelitis is not one of pathogenesis, but of varying intensity and location of the toxic impress of the same bacterial organism. It is also scarcely to be doubted that certain forms of neuritis may result from a similar infection. A strong argument for the truth of this view is offered by the observed fact that during endemic outbreaks of multiple neuritis some patients may present symptoms of poliomyelitis, and that in epidemics of poliomyelitis cases of neuritis and also of cerebrospinal meningitis are frequently interspersed. Specific instances of this fact will be cited later. It seems also not improbable that the bacterial poison of still other infectious diseases may incite a true poliomyelitis; attest the frequency with which the disease appears as a sequel to or complication of

[1] Read before the Alabama State Medical Association, Montgomery, April, 17–20, 1900.

scarlatina, measles, roseola and acute malarial infection.

This toxin, whatever its nature, produces morbid histological changes in and near the motor area of the central spinal gray matter, usually in the cervical or lumbar enlargement, or in both, and on one or both sides of the cord. In the early stages the microscope reveals an acute localized inflammation with congestion and capillary hemorrhages, a marked round-celled infiltration, together with a parenchymatous degenerative lesion in the cell-bodies and processes of the motor neurons, accompanied by corresponding degenerative alterations in those muscular fibers to which the affected nerve-filaments are attached. At a later period the affected portion of the cord is found to be shrunken and sclerosed, many motor cells, as well as nerve and muscular fibers, completely destroyed, the loss being partly compensated for by an increase in the connective tissues.

The disease is most often met with in children at about the second or third year of life, although it has been seen at all ages; it occurs equally in the two sexes; in all races; in all portions of the known world and under all climatic conditions. It is somewhat more frequent in malarial and miasmatic localities near rivers and streams or bodies of water contaminated by organic matters, and occurs most frequently during the summer months.

It appears sporadically, or, as is most frequently noted, the cases come in groups of two or three or more. Instances of its seeming epidemic, or at least endemic occurrence have also been reported, the most notable examples in North America being an irruption of poliomyelitis reported by J. J. Putnam which occurred in and near Boston in 1894, and the outbreak in Vermont during the same year, studied and reported by C. S. Caverly. This last-mentioned is the most remarkable instance of epidemic poliomyelitis on record, and for several reasons merits more than a passing reference. The cases, some 140 in number, appeared from June to September in 1894, in the towns and country lying in the valley of Otta Creek, a small stream dammed at several points and carrying some sewerage. Most of the cases occurred in children, although several adults were attacked, and one man, aged seventy, had a typical case. Domestic animals such as fowls, horses and dogs also suffered from the malady. The clinical histories of the majority of the cases were typical of poliomyelitis, but some of them presented the features of peripheral neuritis, while many of the fatal cases exhibited the convulsions, coma and other symptoms of cerebrospinal meningitis, being diagnosed as such by the physicians in attendance. We have then presented to us the interesting fact that during the same epidemic and presumably from the same exciting cause there occurred cases of poliomyelitis, neuritis, and cerebrospinal meningitis, a circumstance lending color to the contention of Auerbach that these several forms of nervous disease may result from the same microbic infection. It is also noteworthy that during this epidemic mild cases of poliomyelitis terminated in complete recovery, although a study of the reported cases of recovery convinces me that some of them were instances of multiple neuritis rather than of poliomyelitis.

In our own State there has been at least one endemic outbreak of poliomyelitis, that previously reported by me to this Association as having occurred in Greene County in 1896. There were in this instance some fifteen cases of the disease during the summer months, confined to an area of country about twelve miles in diameter. Adults were attacked as well as children, and many of the adult patients entirely recovered. The histories of cases kindly furnished me by Dr. G. A. Moore of Clinton leave no question but that the cases in children were cases of poliomyelitis. One of these cases, a lad twelve years old, was brought to me for treatment, giving opportunity for careful examination, which established the fact that this case was one of true spinal atrophic paralysis. There were no deaths and no cases at all resembling cerebrospinal meningitis. Both negroes and whites were attacked. There was much malarial disease in the community at the same time and it is certain that some of the adult cases terminating in entire recovery were instances of endemic or malarial neuritis.

In an effort to find to what extent this infantile spinal paralysis has been seen in Alabama, I addressed letters of inquiry to practitioners of medicine in different parts of the State. Many of our physicians informed me in reply that no case of the disease had ever been seen or heard of by them; others reported that only one or two chronic cases have been known. Of those who have seen cases, and been kind enough to inform me at length concerning them, I will mention the following:

Dr. E. L. Marechal of Mobile saw some years ago in Baldwin County, in the course of a few months, about a half dozen cases of infantile paralysis. These cases were reported to the Mobile County Medical Society but were never published. Dr. Lucius E. Starr of Camden, Wilcox County, has during the past four years seen three chronic cases, but has known of no acute case during that time. Dr. J. P. Furniss of Selma informs me that during ten years past he has met with quite a number of cases of infantile spinal paralysis. He thinks the disease more common in whites than in negroes, and more common in females than in males. He has never known an instance of complete recovery from the disease. Dr. Andrew Jay of Evergreen has treated four cases. One of these was to all appearances the result of an attack of roscola. In a second case, the first attack of the disease was almost entirely recovered from, but a second attack occurred eighteen months later and resulted in permanent paralysis. In three of the four cases the attack

came on with convulsions, and well-pronounced cerebral symptoms, and idiocy with epilepsy supervened in one instance, suggesting the thought that this was most probably an infantile cerebral palsy, rather than a poliomyelitis anterior. There were three cases of infantile spinal paralysis seen by me in Tuscaloosa in 1896 and 1897. I have not seen any case in Mobile during the three years of my residence there, and have been unable to learn of the occurrence of any case during that time. It would seem, therefore, that poliomyelitis has occurred but sparingly in Alabama. I believe, however, that a more accurate knowledge of the symptomatology of nervous affections on the part of the general practitioner would result in the discovery of a larger number of cases. I have found in conversation with and in letters received from physicians concerning this disease that some confusion exists regarding the exact nature of anterior poliomyelitis and its differentiation from other forms of nervous disease in children resembling true infantile paralysis.

A few words, then, concerning its symptomatology and diagnosis. In typical cases the onset is rapid. The child is one day well and playful, the next fretful, feverish and ailing. An initial chill is not infrequent. The temperature rises rapidly to 102° F. or more; there is much gastro-intestinal disturbance, scanty high-colored urine, nervousness, restlessness, possibly convulsions or spasmodic movements. At this stage there is, as a rule, nothing characteristic and nothing to suggest the impending occurrence of a serious paralytic attack. Within a few days it is discovered that the child has lost the use of one or more limbs, the legs most frequently, and upon examination a flaccid paralysis of most of the muscles in the affected extremities is brought to light. The muscular tissue is soft and yielding, devoid of tone, the electrical reaction of degeneration is present, the tendon reflexes are abolished, and there may be coldness and circulatory sluggishness in the cutaneous surfaces. Pain and tenderness are sometimes present to a limited degree, but sensory abnormalities are in most instances conspicuously absent. The reflex control of the bowels and bladder remains unimpaired. The motor paralysis has often reached its height before it is discovered, but in some cases there is slow progression for a short time. The fever and systemic disorder subside after a few days, and the child is left nearly or quite as well as before the attack, save that the paralysis persists; and even in the paralysis there is usually a marked improvement, many muscles quickly regaining their power of contractility. The permanently-affected muscles undergo rapid atrophy and the limbs diminish in size. There is a slow but continued improvement in muscular power during several months, after which, in cases that are not treated, the condition remains nearly stationary and the patient goes through life with impaired and shrunken limbs. The remote secondary effects of the nerve-cell and muscular atrophy are contractures in certain muscle-groups, with possibly spinal curvature, clubfoot, or other deformity, and a partial arrest of development in the affected limbs, which are left permanently smaller and shorter than normal, and may show joint malformations.

In atypic cases, the fever and general systemic disturbance may be absent, or be so slight as to be entirely overlooked, the motor paralysis being the first indication of the onset of the affection. In other cases the cerebral symptoms predominate with mental confusion or excitement, perhaps coma, often general convulsions. These cases so closely simulate cerebrospinal meningitis that there may be difficulty in making an early diagnosis. The subsequent appearance of the atrophic muscular paralysis would, of course, clear up all doubts.

The other difficulties in diagnosis lie in distinguishing the disease under consideration from a neuritis and from the infantile cerebral palsies. Between neuritis and acute anterior poliomyelitis the following differences exist: Neuritis is a disease of adults, poliomyelitis of children. In neuritis, pain, tenderness and paresthesias are early and prominent symptoms. In poliomyelitis, they occur in minor degree or not at all. The onset of neuritis is slower and more insidious, the paralysis resulting from it advances more slowly and from below upward, and almost all cases of neuritis, not fatal in early stages, end in complete recovery; whereas the paralysis of poliomyelitis usually persists through life. In the acquired cerebral paralysis of childhood the onset somewhat resembles poliomyelitis, but the presence of exaggerated instead of lost reflexes, and the persistence of normal electrical reactions, the predominance of cerebral symptoms, with the absence of that flaccid muscular paralysis and atrophy so typical of poliomyelitis, should make errors in diagnosis impossible. Idiocy or other forms of mental weakness and epilepsy are among the remote after-effects of cerebral palsies; these are sequelæ almost unknown after poliomyelitis. Paralysis from nerve-injuries received at the time of birth, or similar peripheral nerve-lesions occurring at subsequent times from dislocations or other traumatism, as well as the paraplegic spastic paralysis of compression myelitis, can only be confused with the paralysis of poliomyelitis where careful examination is not made.

The prognosis of infantile spinal paralysis is favorable as to life, unfavorable as to complete recovery from the paralysis. There are, however, not a few reported instances of complete restoration of power to the paralyzed limbs. The milder the case and the more nearly the symptoms approximate those of neuritis, the greater the likelihood of recovery. The majority of fatal cases, on the other hand, are those which give clinical evidence of a cerebral complication.

The reasonable expectations in any typical case of poliomyelitis are: That the child will recover from the acute illness; that the paralysis will

rapidly diminish in extent and in severity until a certain point is reached, and that the degree of improvement after this will be very slight in neglected cases, very considerable in cases which are judiciously and persistently treated.

It is always possible by treatment to prevent the contractures, deformities and extreme incapacity so common in the cases which are allowed to pursue their downward course unmolested.

The treatment of acute anterior poliomyelitis during the stage of febrile invasion is much the same as that employed in other forms of bacterial infection. Thus, one employs a mercurial purge, rest in bed, acetanilid or phenacetin to reduce fever and alleviate pain, with the addition of quinine in the event of suspected malaria. An ice-bag may be applied to the spine and the affected limbs enveloped in cotton batting. Counterirritation to the paralyzed limbs is useless. Of specific remedies we have none. The nearest approach is afforded us in the salicylates, the administration of which in quantity sufficient to produce the full physiological effect of the drug is unquestionably beneficial, and to a certain extent curative. Wharton Sinkler of Philadelphia has recently reported a case of this disease in which complete recovery followed the administration of sodium salicylate.

After the fever has subsided tonics and a nutritious diet are indicated, and as soon as all the tenderness has disappeared the limbs should receive systematic massage. This may be advantageously supplemented by a daily rubbing with cod-liver oil. If, as is often the case, the services of a skilled masseur cannot be obtained, some member of the family may be taught to give a very useful rubbing. Passive movements are also to be employed, and the child kept in the open air as much as possible. Faradic electricity cautiously used in a manner which will produce most efficient muscular contractions with the least discomfort is of great value, the object of this, as in the use of massage, being to prevent muscular atrophy. It should be remembered, however, that electricity during the early stage of the disease is positively contraindicated, and that at no time should a stronger current be employed than is necessary to produce distinct muscular response.

In cases in which the deformities have already occurred, much can be done toward correcting them by the use of properly-fitted orthopedic apparatus. Surgical procedures have also in such cases been resorted to with some benefit, the modern operation being the transplantation of tendons, *i. e.*, separating the paralyzed muscles from their tendons and reattaching these tendons to healthy muscles.

I would, in conclusion, insist that judicious treatment, properly and patiently carried out for months, will in all cases result in a degree of improvement far greater than in the beginning seemed possible. No case of infantile spinal paralysis, however unfavorable, should be regarded as beyond the reach of remedial measures.

THE TREATMENT OF WOUNDED AT SEA.[1]

By BELGRAVE MINNIS, M.D.,
INSPECTOR-GENERAL, R. N.

IT appears to me a happy omen that the inauguration of the Navy, Army, and Ambulance Section should take place at a time like the present, when the great war—now we trust nearly at an end—has directed special attention to its three subdivisions, namely, medicine and surgery, in relation to the services, and ambulance in connection with both, and likewise with civil life, particularly in large towns. A goodly supply of papers on these and kindred subjects will claim your attention, but I notice with regret the absence of one on a subject which I consider would be well worth the trouble of writing—namely, on the means at the disposal of the naval medical officer for the treatment of the injured on board a man-of-war, more especially during an action.

Now, before I enter upon this subject, I should like to make a few remarks on the light in which the naval medical officer is regarded by his fellows in civil life. Experience of the medical press, extending over a somewhat lengthened period, has left the impression on my mind that there is a belief amongst our brethren in civil life that the naval medical officers, taken as a class, are either behind the times professionally, or are credited (from lack of zeal) with neglecting to avail themselves of modern discoveries, both in medicine and surgery, and that this is due in great measure to absence for lengthened periods from the schools.

If I have rightly interpreted the meaning conveyed in the medical press, I trust you will believe me when I state that you do us an injustice. It is true that from the very nature of his calling the naval medical officer is away at times for a period of three or four years; but, on the other hand, it should be borne in mind that there are sick in other countries besides Great Britain, and studying familiar diseases under different climatic conditions, or cholera, yellow fever, plague, and other diseases in countries where they are epidemic, with the methods of treatment adopted by those who have lived the whole of their professional life in their midst, modifications in some ordinary operations and substitution of new ones amongst the profession abroad is surely worth something. Operations at foreign hospitals can always be attended, and practitioners and hospital surgeons are, in my experience, ever willing to answer questions, and to show you their cases where possible. I have not said anything about his own patients, which, if his ship is a large one, supply him with a heterogeneous practice, in addition to a capital operation occasionally. From what I have said it should be seen that the naval medical officer need not of necessity get rusty. I have not mentioned that in addition he has the medical press, foreign as well as English, nor

[1] This and the following brief addresses, delivered at the annual meeting of the British Medical Association at Ipswich, July-August, 1905, are supplied through the courtesy of the *British Medical Journal*.

that on his return home provision has been made for seniors and juniors alike to pass through a post-graduate course at the metropolitan hospitals of Great Britain and Ireland.

Now let us return to the question of the means at the disposal of the naval medical officer for the treatment of the injured on board a man-of-war, more especially during an action. To grasp the situation fully it must be borne in mind that the essentials of a fighting ship may be said to comprise the largest percentage of armament, offensive and defensive, combined with capability of rapid motion and a steady platform. So far as our present knowledge goes, these conditions can only be obtained at the expense of space; or, in other words, the more effective a fighting machine the ship is, the less space is available for quarters and accommodation for the sick.

Now, necessary as light and fresh air are to all of us, in the case of the sick on board ship it will easily be understood that this necessity is more urgent. But light and fresh air can only be obtained in sufficient quantity above the water-line, and to place the sick quarters above the water-line, amidst the hurly-burly of a sea fight, traversed by projectiles and wrecked by exploding shells, is of course out of the question, even supposing that sufficient space could be spared. The alternative is treating the sick and injured below, which means a limited amount of fresh air, and that almost invariably supplied by mechanical means, artificial light, rapidly deteriorating atmosphere, and the by no means unlikely intrusion of a torpedo or of the ram of a neighboring ship. It will doubtless be said that this condition exists only during war time, and that under ordinary circumstances plenty of space could be found on deck. Sufficient accommodation is, as a matter of fact, already set apart for the treatment of the sick, with ample light and fresh air, cots, and other fittings of recent and constantly improving designs, and in some cases electric light; but it must be remembered that for the reasons previously mentioned these peace arrangements must be vacated in war time. Now, as permanent quarters for the sick on board a fighting ship, situated in such a position as to be freely supplied with fresh air and light, are practically an impossibility, it follows that the fitting up of apparatus, and the means of utilizing modern inventions are likewise practically impossible, and therefore the naval medical officer cannot avail himself of their use.

In fact the naval medical officer is not to be judged by the ordinary standard. He works under great disadvantages. Take an ordinary operation. A moving patient on a moving table, a moving operator standing on a floor changing its slope laterally and fore and aft, assistants automatically altering their positions in relation to the patient, in retaining the upright position or their equilibrium; tracheotomy by the light of a candle or lamp, the patient being in a cot, or possibly in a hammock; hernia to be operated on, possibly during bad weather, for it is the nature of things that on board ship accidents should most frequently occur when there is most motion, and the decks are wet and slippery; fractures to be retained in position under the same adverse circumstances. As for lack of zeal, a collection of the novel splints and appliances to be found on board ships on return from out-of-the-way foreign stations would testify not only to the zeal of the naval medical officer, but also to his resourcefulness, for, be it remembered, he cannot send into the next street for a second opinion, nor to the instrument-maker for special appliances.

Before I bring these remarks to an end, I may add that it is, I believe, intended in the future to supplement fleets and squadrons in war time with hospital cruisers, not merely transports for the injured, but veritable floating hospitals with steam power, and fittings and appliances up-to-date. During an action these ships would keep out of range but sufficiently close to collect the wounded when the fight was over, and sailing under the regulations of the Geneva Convention would be free from molestation or capture.

SOME PROBLEMS IN RURAL SANITATION.[1]

By JOHN C. THRESH, M.D.,

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One of the most interesting problems which has engaged the attention of scientists during recent years is that of the period for which man will continue to live upon this earth. There is a general consensus of opinion that a time will come when the earth will cease to be habitable, but there is a wide divergency with reference to the length of the period which will elapse before the human race disappears. There are those who think that some great catastrophe may terminate our existence at an early period, others calculate that we are using up the available oxygen in the atmosphere so rapidly that in the course of two or three centuries there will not be sufficient left to support life. At the opposite extreme we have those who teach that man may continue to inhabit the earth for the millions of years which will elapse before the cooling process solidifies all the water on the globe. These speculations however interesting have little bearing upon public health, but there are other questions somewhat analogous in character which sanitarians will have seriously to consider. One of the most important is the continued increase in population, an increase almost exclusively confined to towns and cities. The effect of overpopulation is well exemplified in the two countries in which the population has attained its maximum density, India and China. The result is periodic famines, generally associated with pestilence in some form, affecting wide areas and millions of people.

The earth's population is increasing steadily, and in certain countries with great and continu-

[1] Introductory remarks delivered at the opening of the Section of State Medicine.

ously increasing rapidity. The production of food cannot for any very lengthened period keep pace with the increase of population, and it may be that famine and disease will more and more frequently occur and keep down the population within the limit of the available food supply. The growth of large manufacturing centers with the influx of rural laborers into towns, and the general neglect of purely agricultural pursuits, must in this country produce some marked effect. That this will neither conduce to increase health nor longevity can scarcely be denied; hence it is a result which we must deplore. The country has already reached a condition in which the population far exceeds that which can be fed by its produce, and the condition is being aggravated year by year by the increasing population and continuous neglect of agriculture, and I am afraid will continue until we receive a rude awakening, an awakening which in all probability will stagger humanity.

Our purely rural population is slowly decreasing, our urban population is rapidly increasing; therefore year by year the feeding problem becomes more serious. This is a fact so well recognized that its very familiarity is producing contempt. It is well, however, that we should from time to time be reminded of the fate upon which we appear to be almost blindly rushing. Sanitary improvements, unfortunately, tend only to aggravate the evil and hasten on the day of reckoning. So much attention has been devoted to urban sanitation that the town dweller enjoys now many advantages not possessed by those who remain in the country, advantages which tend to prolong life, increase health, and, generally speaking, make life better worth living. For example, in most of our towns every house is efficiently drained and abundantly supplied with pure water, rendering it possible, with the minimum of trouble, to keep a house and its surroundings sweet and clean, and therefore healthy. In our villages and rural districts nuisances from the improper disposal of filth abound on every side, and the water supplies too often are unsatisfactory in quality as well as in quantity.

Land is going out of cultivation and decreasing in value, yet it is often impossible to obtain a small quantity to effect sanitary improvements. Let a plot be required in order to provide cottages with ground upon which to dispose of the slops and house refuse, or for the erection of better houses for the laborer, or for the erection of an isolation hospital, and it is often almost impossible to obtain it. Landowners refuse to sell small areas for such purposes, yet, in my county at least, farms are sold at ridiculously low prices, and the speculator who purchases, recognizing the demand for small plots, promptly cuts up the farms and sells the land at an enormous profit. The dog-in-the-manger policy so common amongst landowners and their agents I cannot account for, but it is a fact which is well recognized and deplored.

How to bring back people to the land is one of the greatest problems of the age. It is far too large a subject for me to dwell upon, but I am convinced that one of the chief requirements for restoring prosperity to our rural districts is increased facilities for acquiring small areas of land for sanitary improvements. Some years ago one of my sanitary authorities succeeded in acquiring a small amount of land behind a group of rural cottages which had no gardens. A portion was allotted to each cottage, the conveniences, which had been near the back doors, were removed to a safe distance, and there was sufficient ground to permit of the slops, house refuse, etc., being disposed of without causing any nuisance, and the old defective drains with the accompanying ditch nuisances were abolished. Twice since the same authority has made repeated efforts to carry out similar improvements in other places, but the necessary land could not be obtained. With a sufficiency of land adjoining or near each house, the necessity for sewers in most of our rural districts would be avoided.

In compact villages, urban in character, drains and sewers will, I am afraid, still remain a necessity. The expense of such drains and sewers would in most cases be willingly borne, but the cost of obtaining sufficient land upon which to dispose of the sewage is one of the most frequent excuses for not carrying out such improvements. Land not worth £5 per acre suddenly acquires a value of £100 or more per acre and this together with the trouble and worry consequent upon the adoption of any scheme of sewage disposal prevents the adoption of such schemes. If the numerous experiments now being made on bacteriological lines result in the discovery of some simple process, requiring but little land, for disposing of sewage, a great advance will be rendered possible in rural sanitation.

The supply of water in our cottages is even a greater difficulty. Sanitary authorities are not only averse to the expenditure necessary to provide a public supply, but too often also averse to causing landlords to provide such a supply when it can be done at what is defined by Act of Parliament as a reasonable rate. The effect of such a policy has been well exemplified recently in a rural district in which I am interested. A group of cottages derived water from a brook, one of the tributaries of which, at a higher point, received a certain proportion of the slops from the drains of a village. A case of typhoid fever occurred in the village, and about a month later an outbreak of typhoid occurred in the group of cottages, and resulted in several deaths. Some five years before I had endeavored to get a proper water supply for these cottages, but an influential member of the council opposed this as being unnecessary. Notwithstanding my predictions of future trouble, the resolution to call upon the owner to provide a proper supply was lost. I only hope the lesson taught by this epidemic will not soon be forgotten. The cost to which the

sanitary authority and others have been put is far greater than would have been required to provide a supply of good water. The multiplication of dairy farms also is increasing the necessity for an abundant supply of pure water in rural districts; but as I shall have again to refer to this subject, I will not further enlarge upon it now. I regard it as one of the most important requirements of our villages, and one which is imperatively necessary if we hope to get back any considerable portion of the population from the towns.

Another very important requirement, I might almost say the vitally important requirement, is decent cottages for our rural laborers. Many Acts of Parliament have been passed having for their object the better housing of the working classes. Their utility in rural districts has been practically *nil*. Those who had the drafting of them worked upon an utterly erroneous assumption. They evidently were of opinion that unless carefully restrained sanitary authorities would be infected with a mania for building, and that cottages would spring up like mushrooms in places where they were not required as well as in those in which they were really needed. A sanitary authority, therefore, can do nothing until it has obtained the consent of the County Council. No facilities are given for acquiring suitable land at a reasonable cost and with little trouble. The Local Government Board must next be satisfied with every detail, etc. The result is that sanitary authorities wishing to provide cottages are only too glad to let the matter drop when their clerks point out the amount of circumlocution entailed and the trouble and expense involved. What is wanted is an Act which will encourage sanitary authorities to build and offer them every possible facility for providing decent accommodation for the laborer with the least possible trouble and at the lowest possible cost.

One great difficulty in the way of providing cottage accommodation by sanitary authorities was well stated by certain gentlemen appointed recently by the Essex County Council to hold a local inquiry under the Housing of the Working Classes Act. They stated that many cottages were let with the farms, and quoted an instance in which cottages worth 4s. 6d. per week were let by the farmer to his men at 1s. per week. In other words, they say: "The men's real wages were 3s. 6d. per week higher than their nominal figure, and he (the farmer) succeeded in retaining his men without appearing to break the local wages rate. If the farmers would charge a rent representing the real value, and pay a proportionately higher wage, there might be some chance of private enterprise stepping in to provide the necessary cottages, but the present system destroys private enterprise, and if it be persisted in the housing conditions in such districts must continue to grow worse, and the tendency towards the depopulation of the rural districts be increased." On the other hand, the Commissioners point out, if sanitary authorities provide cottages and let them at such low rents, the farm laborer is being subsidized out of the rates. This fact alone is sufficient to retard necessary action, and certainly prevents any rash action on the part of a sanitary authority. The whole problem bristles with difficulties, but that is no reason why it should not be attacked. It is a reason, however, for suggesting that before any new Bill is presented those who draft it should know something about the subject. We shall welcome the discussion on this subject, which will be opened by my friend, Dr. Tew, at one of the meetings of this Section. The effect of the present defective accommodation upon the mental, physical, and moral well-being of the inhabitants is too well known to need repetition. The housing problem is of importance not only to the rural laborer but to the whole country, and should be treated as a national problem.

My apology, if any is needed, for touching upon these questions relating to rural sanitation in my opening address is that we are meeting in a large agricultural center, in the center of a group of rural counties, in which these subjects are of the deepest interest, and that I, as medical officer of health to one of these counties, am myself more particularly interested in their study, and am desirous of doing what little I can towards improving their sanitary condition, and bringing about a new era of prosperity.

MODERN PATHOLOGY.[1]

By E. E. KLEIN, M.D., F.R.S.,

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Pathology, in its analysis of the nature of the tissue changes, has been influenced, it is admitted, to a not inconsiderable degree by the progress made in bacteriology within the last two or three decades.

Pathology, no less than, and in no way different from, other biological sciences, intent on answering the "what," as also the "why," asks not merely what is the intimate nature of a particular change and aberration of a tissue or organ from its normal or physiological state, but also, and in a higher degree, why this change, and what its cause? Why a particular alteration in one, another in another instance?

Microscopic and experimental analyses have both been active in discovering some fundamental facts, but have left numerous gaps in this study, and it is by the aid of bacteriology—since it became, thanks to the foundations laid by Koch, an exact science—that these gaps are being closed up, or at any rate that the manner and method are indicated by which these gaps may, and probably will, be filled up.

The time at my disposal does not permit of more than illustrating these propositions by a few of the more striking examples.

[1] Introductory remarks made at the opening of the Section of Pathology.

1. *Inflammation.*—For more than a century inflammation, by the aid of the improved microscope and by experimental work which had occupied a host of active minds and of great experimentalists, was being analyzed in all its elements; the part that the vascular system, that the tissues, that the nervous mechanism play in establishing the peculiar alterations constituting the phenomena of inflammation, suppuration, and their sequelæ; thereby an enormous number of facts were brought to light, by which the understanding of these particular aberrations from and return to the normal conditions became clearer, or were believed to have become well understood. It is now admitted, however, that with the exception of traumatic, thermic, and chemical agencies, the chief, if not the sole, cause of the changes of the vascular apparatus and the surrounding tissues constituting inflammation, inclusive, of course, of suppuration, are micro-organisms, which, either by their chemical activity—producing substances which exert a toxic action on the vascular system or the tissues, or both—or by the toxic nature of the protoplasm of the microbes themselves, lead to the abnormal interaction between the vessels and the tissues, manifesting itself in the exudation of fluid and formed elements of the blood and the progressive or retrogressive changes of the tissue elements themselves.

It is one of the best-proved acquisitions in bacteriology that many microbes, either when growing and multiplying outside or within the tissues, produce toxins which in the tissues set up the phenomena of inflammation either locally or generally. This applies not only to those microbes which are specially and in the narrower sense connected with suppuration and abscess—for example, various species of pyogenic staphylococci, streptococci, and bacilli, but also to other specific pathogenic microbes like the diphtheria bacillus, the tubercle bacillus, tetanus bacillus, typhoid bacillus. Koch's tuberculin, the diphtheria toxin, the toxins of many other microbes produced in the test tube, and then injected into the tissues produce typical inflammation. The same has been shown of the dead protoplasm of many microbes—for example, tubercle bacillus, cholera vibrio, bacillus pestis, and others, as also of some ordinary saprophytes, namely, that the dead bodies of these microbes contain pyrogenic and pyogenic substances capable of producing typical inflammation.

Another set of phenomena of which an explanation is supplied by bacteriology is one well known in the study of inflammation, that is the greater or lesser number of leucocytes in some inflammatory foci. It is well known that while some inflammations are characterized by copious transudations with few leucocytes, others on the other hand are associated with copious accumulation of leucocytes, as in suppuration. The phenomenon of chemotaxis seems to offer a good explanation for these differences, that is to say, while some microbes or their toxins powerfully attract leucocytes from the blood and connective tissues, others have no such effect or possess even the reverse, namely, negative chemotaxis. In a similar manner Pfeiffer first classified the effects of chemical substances on lower organisms.

2. *Necrosis.*—The most valuable and earliest observations were those of Roux and Yersin, showing that the toxin produced by the diphtheria bacilli has a powerful necrotic action on the tissues. The further demonstration of the actual presence of the toxin in the diphtheritic membrane supplied at once the simplest and most feasible explanation of the necrotic condition of the mucous membrane in diphtheria, namely, the multiplication of the diphtheria bacilli at a particular locality—be it the fauces or larynx, or trachea, or bronchi, or any other membrane—causes the production of the toxin, which in its turn causes the inflammation and further the necrosis of the membrane. But this action, namely, localized inflammations leading to gradually progressing necrosis of the tissue elements, is not peculiar to the diphtheria bacilli and their toxins, for it is almost a common character of many if not most pathogenic microbes; it is observed in connection with almost all hitherto known pathogenic bacteria, tubercle, glanders, leprosy, pseudo-tubercle, pathogenic cocci, and bacilli of various kinds. It is this progressive necrosis of the tissue following the typical symptoms of inflammation, congestion, stasis, diapedesis, and emigration of leucocytes, which is observed, granted the necessary number and virulence, as the effect of the action of many pathogenic microbes, inasmuch as at a particular locality—primary as well as secondary foci—so long as their multiplication proceeds and their toxins are being produced in increasing amounts the necrosis of the tissue spreads into larger and larger areas. In non-microbic inflammations, on the other hand, this necrosis is local and circumscribed, being due to the direct action of the noxious agent—thermic, chemical, or traumatic—and its action is limited to the part actually attacked or its immediate surrounding. The necrosis itself appears in both series, however, of the same essential character, namely, coagulation of the protoplasm of the tissue cells, inclusive of the vessels themselves, and a gradual disintegration and destruction of the cells as also of the intercellular ground substance. These phenomena have been well observed in the case of a number of pathogenic microbes. Another not less important set of appearances associated with the necrotic change caused by bacteria is the secondary leucocytosis and suppuration; and for this the chemotactic action that the necrosed tissue exerts on leucocytes, attracting these for one reason or another, probably as scavengers and removers, offers a ready explanation.

3. *Specificity of Cell Secretions.*—Until recent years it was generally considered that a specificity of cell secretions is one of the fundamental phenomena of the physiological or normal tissues. Behring, Kitasato, Brieger, Roux, Ehrlich, and many others have, however, shown that under the

activity of many pathogenic bacteria and their toxins in an affected body a curious and important series of secretions on the part of the cells of the tissues takes place which is as specific as those others associated with the normal life, I mean, the production of specific antitoxins and the production of specific agglutinins. It was further shown that not only under the stimulation of the cells by bacteria and their toxins are those specific antitoxins secreted, but that organic substances like abrin, ricin, venin, are capable of stimulating the cells to a like production of specific antitoxin. Moreover, quite recently a further highly interesting series of facts have been brought to light, namely, that particular tissue taken from one animal body and introduced into another causes a specific reaction, showing itself in this that the living cells of the latter produce under the particular stimulation substances specifically acting on the particular tissue that has caused the stimulation. Illustrations: (*a*) Injection of ciliated epithelium of the trachea of the ox into the peritoneal cavity of guinea-pigs produces a definite change, inasmuch as in a second injection of similar epithelium the ciliary movement is stopped and the cells destroyed in a markedly shorter space of time than in a normal animal; the same action takes place *in vitro;* here the same difference between normal serum and specific serum is demonstrable. (*b*) Metchnikoff shows that rat's spleen injected into guinea-pigs produces serum which is capable of agglutinating and dissolving leucocytes of the rat. (*c*) Funck shows that repeated intraperitoneal injections of rabbit's spleen into guinea-pigs in ascending doses produces a serum which *in vitro* has specific cell-destroying—cytolitic—action on both lymphocytes and polynuclear leucocytes of the rabbit, whereas red bone marrow of rabbit produces when administered in the same way a serum which has a greater action on polynuclear leucocytes than on lymphocytes. From these experiments it is clear that by certain pathological processes the tissue cells are capable of being so altered that their secretions assume a specific action not possessed by them before.

TROPICAL DISEASES.[1]

By Colonel KENNETH MACLEOD, M.D.

Since the last meeting of this Section events have occurred which have emphasized the significance and enhanced the importance of its work. The war in South Africa has stimulated into vivid reality the unity and solidarity of the British Empire. The imperial idea implies not only a community of interests—social, commercial, and political—between the mother country and her colonies and dependencies, but also a community of suffering; and as tropical conditions and tropical diseases prevail in Greater Britain to such a large extent, the study of these as they affect both the governing and the governed has come to be recognized as a matter of vital and cardinal necessity. This has been fully acknowledged by the able minister who presides over the Colonies, and who has realized more clearly than any of his predecessors the immense importance of inquiry and education as regards tropical pathology and hygiene. The Government of India has also awakened from its torpor, and taken thought and action in the same direction by encouraging research, training men in bacteriological methods, establishing laboratories, appointing commissions, and promoting special investigations.

A knowledge of the pathology and pathogenesis of disease must obviously precede and guide preventive and curative effort; and it cannot be too loudly proclaimed that this knowledge can only be obtained by systematic scientific research. The days of casual and statistical observations and dissertations have gone, and it is now universally understood that nothing will avail for the solution of pathological problems except the undistracted work of trained agents provided with ample opportunities, facilities, and appliances. The recent history of malariology, to employ a new and expressive term, is a signal illustration of the dependence of sanitary and therapeutical endeavor on pathological discovery. Laveran in 1880 furnished the key to the morbid processes which in malarious disease take place within the body by the discovery of the plasmodium malariæ. Manson and Ross pioneered the brilliant investigations which have revealed one, if not the one, means by which this organism leaves the infected subject, lives and breeds in outer nature, thus compassing the communication of what must now be admitted to be an infective disease. It is interesting to observe how this knowledge is being at the present time turned to practical account, and how it explains and gives precision to methods of prevention and cure which had previously been resorted to empirically. Koch in the Dutch Indies and German New Guinea has been attacking the plasmodium within the human host, and claims, by destroying it in that phase or stage of its existence, not only to cure the individual, but to reduce greatly, or altogether abolish, the prevalence of malarious disease in the community. Sambon and Low in Italy are addressing themselves to the extrasomatic life of the parasite, and endeavoring by special contrivances and precautions to cut the morbific circuit outside the body. Koch's labors have an intimate bearing upon the subject which has been selected for discussion at this meeting, and will, no doubt, be noticed and criticised by those who take part in it. The results of the proceedings of Drs. Sambon and Low will be eagerly watched, as they will contribute an important aid to the solution of the question whether the Anopheles is the only medium of malarious infection, and, if so, whether this occurs invariably by inoculation.

The South African war has forced into prominent and painful attention two diseases which,

[1] An address delivered at the opening of the Section of Tropical Diseases.

although they cannot be called tropical diseases, manifest themselves with special severity as regards incidence and fatality under tropical conditions—namely, enteric fever and dysentery. The theater of the war—the uplands of South Africa—cannot be classed, either as regards position or physical characters, as tropical. Malarious disease, the special and predominant product and index of tropical countries, is conspicuous by its absence among the causes of disability and death occurring in the British army of South Africa. But the meteorological conditions which obtained during the early months of the campaign were most aptly described by the term "tropical." Sunstroke and sun fever were very common. I have endeavored to ascertain whether these cases were all or mostly cases of heat shock, and whether any considerable number of them presented the phenomena of heat fever—so-called "siriasis"—and, if so, whether these occurred in epidemics or appeared to be communicable. I regret to say that I have not succeeded in obtaining any information on these points. The cases which I have met with at Netley have presented a similar history and similar sequelæ to those received from India. Perhaps, when the medical history of the campaign comes to be compiled, some facts bearing on these questions may be forthcoming. I allude to the matter here and now in the hope of eliciting information.

That enteric fever existed in South Africa and was apt to prevail in South African towns and cantonments during the summer months was well known, and its appearance among the troops engaged in this war was fully anticipated; but the excessive prevalence of the disease in a country and climate with a reputation for exceptional healthiness has come as an unpleasant surprise. No doubt these circumstances and exigencies of warfare are mainly responsible for the heavy tribute of sickness and death which enteric fever has levied. War shares with famine the malignant power of enhancing the susceptibility to whatever infection happens to be present at the place and time.

Enteric fever has been in grim evidence during recent wars on the Indian Frontier and in the Egyptian Soudan; but malaria, cholera, yellow fever, and dysentery have on other occasions been stimulated into disastrous activity by war. So with famine, malarious disease, smallpox, diarrhea, dysentery, and relapsing fever have attended or followed it, and at the present time cholera and plague are raging among the famine-stricken in India. The infection of enteric fever seems to be ubiquitous, portable, and peculiarly facile and subtile; and perhaps the most urgent question of the hour is how to mitigate its prevalence in the British army, in which in times of peace it causes one-third of the total mortality.

It is important to note that a very marked contrast exists between the ordinary incidence and mortality of the disease in temperate and tropical or subtropical countries—in England and Canada on the one hand, and in India and Egypt on the other. A similar contrast appears in the French army stationed in France and in Northern Africa. How much of this great excess is due to tropical conditions, topical and climatic, and how much to remediable sanitary defects it is not easy to say.

But, side by side with the excessive suffering of the army in India we are confronted with the remarkable fact of the immunity of the native population. Whether a similar immunity exists among indigenous races and habitual residents in South Africa is an interesting question. Evidence seems to indicate that it is so. The native immunity in India, though not absolute, is undoubted; its cause has not been satisfactorily ascertained. It has been attributed to habituation to minute dosage of the contagium, to protection conferred by attack during infancy and childhood, and to racial resistance acquired in the course of generations through both these influences. Some experiments by Freyer and others indicate that natives give positive reactions to Widal's test; but more extended and exact investigations on this point are desirable. It is quite certain that the immunity of natives is not due to superior sanitary conditions. Whether a similar immunity—temporary or permanent—can be engendered in European subjects by a process of inoculation such as has been devised by Professor Wright, of Netley, and practised on a large scale among soldiers proceeding to the seat of war, is a question, the reply to which is awaited with eager anxiety. Some figures obtained from Ladysmith have been published by Professor Wright, which seem to show that some immunity is conferred by these inoculations, but though encouraging, they are by no means demonstrative. Similar procedures for creating an immunity against cholera and plague, initiated by Professor Haffkine, have in India been attended with satisfactory results. But although a certain measure of preventive success has been obtained by these inoculations, the employment of them appears at present to be practicable and useful only as an emergent expedient in the presence of a serious outbreak; and the prevention of cholera, plague, and enteric fever on a large scale must apparently be essayed on other lines and by other methods.

Dysentery has been very rife in the South African army, but the disease has exhibited mostly a mild type and been amenable to treatment. In some camps it has presented the aspect of an epidemic or infectious disease; but whether the infectiousness is apparent or real—due to common exposure to certain noxious conditions or to communication from man to man of some specific contagium—it is impossible in the absence of knowledge regarding the nature of the contagium or contagia of dysentery to say. The dysentery of war and famine is believed to be infectious, but notwithstanding much able and laborious research we have yet much to learn concerning the pathology and causation of dysentery. Imperfect conservancy, foul water, alter-

nations of temperature, exposure, fatigue, and bad food, which are undoubtedly adjuvants if not factors of dysentery have been in baneful operation in this war, and a new disease resembling dysentery has been described under the name of "dust colic." This seems to be a mucoenteritis caused by the swallowing with water and food of irritating particles of grit blown about by dust storms. The presence of the grit in the evacuations does not seem to have been sought for or found.

The persistence of plague in India and the appearance of the disease for the first time south of the equator—in Mauritius, South Africa, South America, and Australia—are events deserving of special notice. The disease has during its present prevalence confined itself mostly to warm and hot countries, and, though not exclusively a tropical disease, nor apt in the tropics to be at its worst when conditions are most typically tropical, it appears to find in tropical countries and circumstances the most favoring environment. It is curious to remark that, while in India natives appear to be readily susceptible to the infection of plague, Europeans, though not absolutely insusceptible, exhibit a comparative immunity—the reverse of what happens as regards enteric fever. This immunity is doubtless what I venture to call a sanitary immunity, due to a purer personal domestic and social life, and perhaps to circumstances and habits rendering admission of infection less easy. This kind of immunity is also observable in some places—in Calcutta, for example—as regards cholera. How far an immunity of this sort is capable of being achieved as regards the infection of enteric fever, it is not easy to say. Certainly it has not been accomplished as yet in India or Egypt. The Bermudas used to render the highest ratios of enteric prevalence and mortality, but within recent years considerable reduction of these rates has occurred through sanitary reforms in the matter specially of water conservancy and sewage disposal. Similar causes have reduced the burden of enteric suffering in the French army of Algeria, and the power of sanitation has also obtained signal illustration in the banishment of beriberi from the Japanese navy. Great Britain appears also to have acquired an immunity against cholera through sanitary reform and effort. These experiences are full of encouragement and hope.

I trust that I have succeeded by these discursive observations in showing that recent events have expanded the scope and aim of our work in this Section; and it seems to me fitting that we should at the commencement of our sectional labors remind ourselves of what these are. Our concern is not only with exclusively tropical diseases, many of them strangely named and imperfectly investigated and understood, which may be encountered and contracted in hot places where Europeans are compelled to reside for purposes of protection, administration, or commerce, and are not as a rule met with outside of the tropics. More important are those diseases, originally or essentially tropical, which may be disseminated by intercourse with the tropics, and may prevail for a time in extratropical localities in which they are not habitually present. And, finally, there are the diseases which are not specially tropical, but which are liable to be aggravated in prevalence or severity by tropical conditions. These three classes represent a wide field of research, and, in addition, interesting questions arise as regards diseases which, common elsewhere, are rare or unknown in tropical countries.

The field of study thus presented has its scientific and humanitarian aspects, and its cultivation has become an essential part of the business of imperial administration. It embraces not only acute infections and the sequelæ or constitutional incapacities resulting therefrom, but includes also those conditions affecting health and life which are vaguely designated as climatic, remediable only by adaptation, or which arise from sanitary defects or neglects capable of more easy amelioration. Hygienic improvements, personal, domestic, and social, have undoubtedly raised the standard of health and the value of life in the tropics, and residence and service in hot countries offer fewer and less formidable risks than they did in times past. But behind the question of individual impunity looms the question of colonization or the continued vigor and vitality of the race when transplanted from temperate to torrid zones. The solution of these weighty problems constitutes the reason and purpose of our distinct sectional existence.

CLINICAL MEMORANDUM.

A CASE OF DOUBLE VAGINA AND DOUBLE UTERUS: FOUR PREGNANCIES.

By HERMAN E. PEARSE, M.D.,
of Kansas City, Mo.

The woman who bore this deformity was ignorant of its existence; moreover, she passed through four successive pregnancies in safety. The septa had been almost obliterated by the successive acts of parturition and only remains of the former condition could be found.

Deformities of the genital tract are of sufficient frequency to enable them to be generally recognized, yet are rare enough to lend interest to their occurrence. Double, duplex, bipartite and bicarnate uteri are frequently reported. Gould and Warner, in their work on "Anomalies and Curiosities of Medicine," state that complete enumeration of cases reported would cover several pages. This is doubtless correct, as is also the fact that many cases are never recognized.

This case is of interest from the fact that for sixteen years the woman had fulfilled the duties of wife and mother, bearing four children at term and in comparative safety. The case is briefly as follows: On January 10, 1900, I was requested by Dr. A. N. Magruder, of Pittsburg, Kansas, to examine Mrs. K., aged thirty-six years, married

and the mother of four children. She was suffering from uterine catarrh, due to cervical laceration, and I was asked to express an opinion as to whether or not this condition was the cause of certain "head pains" that had existed for eight years and that had made their appearance about the time of the birth of her last child. She stated that she had been married sixteen years and had four confinements. The first two children had been vigorous at birth; the third had been puny, but had reached childhood in safety. These three are to-day alive and well. During these three pregnancies she had suffered much pain and uneasiness in the lower abdomen and pelvis. In all three cases labor had been protracted and recovery slow, but forceps had not been used. The fourth pregnancy gave her more pain than any of the preceding ones and was marked at the middle of the ninth month by tearing pains and smart hemorrhages. This continued at intervals for about six weeks, when (she says a full month beyond her normal period) tardy labor developed and the fourth and last pregnancy terminated with a stillborn child. It seemed to be of perfect development and showed no sign of disease. She made a poor recovery and has had "head pains" and poor health since, although able to do her own housework.

Examination showed a normal vulva, with a slight ridge extending back from the fourchette and a corresponding one, so large as to resemble a prolapsed urethra, on the anterior wall. In the vagina were the remains of a complete septum, showing that two perfect vaginæ had existed and had been merged into one by the rupture of the septum. The cervix showed the remains of the double formation, but the right uterine cavity could only be traced about one and one-half inches, while the left was much deeper. The septum between them had been torn away for some distance and the laceration had extended laterally across and involved the wall of the cervix on the right. On the left the laceration had extended deeply into the vaginal wall. A large, bleeding, granular surface, caused by these gaping lacerations, made it very difficult to examine them accurately, and, moreover, the patient's position and the light were both faulty. There was such a degree of inflammatory adhesion and deposit about the uterus and to its left that I was unable to decide as to the condition at the fundus. It seems probable that the four pregnancies had taken place in the left uterus, and that inflammatory changes had so fixed the cervix in the last pregnancy that laceration at the last month had caused the pain and bleeding that then occurred and possibly delayed the labor one month, as the patient averred had been the case.

The patient, upon being informed of her deformity, stated that a woman physician (I was the first male physician she had consulted) soon after her marriage had examined her hurriedly one day, and told her she suspected some such condition as I described. She had moved away soon after and had never been examined since except at her deliveries, when nothing had ever been said of the matter by any of her accoucheurs and she had supposed it all a mistake.

MEDICAL PROGRESS.

Transmission of Tuberculosis.—In a lengthy article, in which he discusses the question of the transmission of tuberculosis through the milk- and meat-supply under two main heads, *i. e.*, (*a*) transmission to animals, and (*b*) transmission to man, J. J. Repp (*Phila. Med. Jour.*, August 11, 1900) formulates the following summary and conclusions. Summary of the evidence which he presents: (1) Tuberculosis may be transmitted to animals through their eating the meat of certain other animals which are tuberculous or by their being inoculated with it. (2) Tuberculosis may be transmitted to animals through their ingestion of the milk of certain cows which are tuberculous, or by their being inoculated with it, both when the udder of the cows is diseased and when it is healthy. (3) Therefore the meat and milk of certain tuberculous animals contain living virulent tubercle bacilli. (4) The tubercle bacilli of cattle are pathogenic for man. (5) Therefore the meat and milk of certain tuberculous animals is capable of producing tuberculosis in human beings who use these products as food. (6) There is no evidence that the converse of these conclusions is true. From the above summary he arrives at the following practical conclusions: (1) *In regard to meat.* The meat of all food animals, especially cattle, is unfit for food when the animal is highly tuberculous; but is safe for food when the animal is only slightly or moderately tuberculous, especially so if the meat is well cooked, provided the tubercular tissues are eliminated. (2) *In regard to milk.* (*a*) The milk of a cow with tuberculous udder is always dangerous for food unless it is well sterilized. (*b*) The milk of tuberculous cows with healthy udders is sometimes dangerous for food unless well sterilized. Hence milk of tuberculous cows without disease of the udder should always be looked upon with suspicion. (*c*) Tuberculous cows may be kept for breeding purposes provided they are isolated, even from their own offspring, and their products sterilized before use; or, (*d*) they may be slaughtered for food under conditions as stated in Conclusion 1. As a general conclusion, the writer says that all legislature and regulation should favor the disposition of tuberculous animals as suggested above so far as milk and meat are concerned.

Puerperal Eclampsia.—In his experience, says J. B. Todd (*Phila. Med. Jour.*, August 11, 1900), cephalalgia is the danger signal of coming eclampsia. A woman may have slight albuminuria and recover under proper treatment, but if during labor and for two days afterward the

patient complains of severe pain in the head there is danger of eclampsia. The writer does not rely in treatment on diuretics, especially digitalis and potassium acetate, as they depress the heart and do not eliminate the urea. He believes hydragogue cathartics are required for this purpose and uses elaterium because it can be depended upon to produce a thorough action. Following the administration of the hydragogue he gives iron and mercuric chloride, as follows:

℞ Tr. ferri chlor..... ℥i
Hydrg. bichlor..... gr. i.
Ft. sol. Sig. gtts. xii in a capsule every four hours.

The writer believes that morphine is *the* drug to control the convulsions, provided it is given in sufficiently large doses. He gives from one-half to one and a half grains hypodermatically, and repeats the dose whenever, and as often as, the patient complains of severe pain in the head, whether it has been one hour or longer since the last dose was given. Todd reports ten cases treated in this manner and sums up the results as follows: In six cases after labor there was a single convulsion; all recovered. Of two cases with convulsions during labor, one had a single convulsion and the other several. Both mothers and children lived. In one cases with convulsions in the second month of pregnancy, the patient carried the fetus four months without any inconvenience. In the tenth case, abandoned by an eclectic physician, death ensued before the remedies could act.

Operation Shock and Infection.—Patients who die unexpectedly after successful operations, according to F. B. Twick (*Med. Rec.*, August 11, 1900), usually are the victims of shock alone or of shock and infection, the last named being especially common in the presence of the former. Numerous experiments have shown that when the body resistance is reduced by shock germs which ordinarily are not pathogenic become so and frequently to a virulent and fatal degree. As a means of preventing some of the commoner sources of infection from the skin, a rubber sheet encircling belt-wise the body at the site of operation is suggested. Being non-absorbing it cannot become contaminated like the ordinary laparotomy towels, sheets or spreads, and being impermeable serves to limit shock by keeping the body heat from evaporation. It may be cut flap-wise and the flaps turned down into the peritoneal cavity and secured by sutures, thus protecting the wound-margins, much in the manner the serosa does when brought out of the wound and stitched to the skin. The disadvantages of such a rubber belt summarized are: (1) Prevention of contamination of and by the skin; (2) reduction of the tendency to shock by preventing evaporation. In addition to this a rubber dam can very advantageously be used to shut the parts of viscera operated on out of the general peritoneal cavity. In a gastroenterostomy the stomach and intestine may each be drawn through separate openings, secured against leaking by rubber bands, the union done, irrigation completed, and the dam removed by cutting. The advantages and features of this are: (1) Absolute exclusion of the abdominal cavity from infection by visceral contents or by outside influence; (2) prevention of excessive escape of visceral contents; (3) partial control of hemorrhage by the pressure of the rubber band or collar; (4) reduction of the liability to trauma and to shock by undue handling of the viscera; (*a*) covered by the rubber they are less liable to injury; (*b*) held in position by the rubber bands there is less need of pulling; (*c*) less evaporation occurs by virtue of the rubber-tissue protection. Natural immunity from infection depends on the resistance and this in turn upon shock, which therefore becomes a very important factor as well as the site, the virulence and quantity of the infecting dose. Of all the combatants of shock heat appears to be the best, if dependence upon one become necessary. Very excellent results have been obtained by the author with soft, flaccid hot-water bags, at a temperature of 48° C., covered with gauze for absorption and introduced into the abdomen as dams to the viscera during laparotomies. The heat not only maintains the body temperature, but irritates the visceral nerve-filaments which certainly maintain vitality. They possess none of the drawbacks of "flooding" a serous cavity, thereby perhaps spreading infection or injuring the endothelial cells. They do, however, present numerous attractive features, namely, (1) continuous application of an even temperature; (2) softness and adaptability to form like a water-bed; (3) removability through a small opening; (4) as a final support of the suture-line they excel gauze and can be removed through a smaller opening and more easily.

After-Pains From Extraction of Teeth.—The diagnosis of the causes underlying this troublesome condition, says C. B. Isaacson (*Med. Rec.*, August 11, 1900) is difficult and for the general practitioner important. The chief factors at work in the trouble are the following: (1) Retention of the pyogenic membrane by more or less adhesive inflammation. The pain is then acute. The treatment is a thorough curetting of the socket with a spoon or dental burr and packing. A good solution to add to tamponnade is:

℞ Mentholi .....
Tincturæ Iodi.....
Acidi Carbolici..... aa ℥i
Aetheris .....
Chloroformi ..... aa ℥ss.
M. Sig. External use.

(2) Expansion of the osseous walls by the violence of extraction. Cutting away the injured bone, with cleaning and packing of the cavity, usually cures quickly. (3) Fracture of the alveolus. Fragments must be taken away. (4) Sundering of the maxillary process and alveolar margin with tissue laceration, presenting usually

diffuse inflammation, rough bony prominences and pus pockets. Incision of the inflamed gum, removal of sharp points, curetting of pus cavities and packing of them, preferably with iodoform gauze, are the indications. (5) Removal of offending root spicula. (6) Often teeth become diseased when the gums have receded and when removed bare unhealthy bone is left behind. Such must be cut off, when the gum rapidly closes down. (7) Long after removal there may appear pus-burrowings and perforations of the alveolar ridge. Such indicate a sequestrum which demands appropriate surgical ablation. (8) Pains may be due to neurasthenia, syphilis, vagaries of catamenia or of menopause and then demand individual management. (9) Finally, foreign bodies of any description (clot, spicula of bone, food, etc.) may lodge in the cavity and should always be taken out.

Relation of Seminal Vesiculitis to Impotence.—The three varieties of impotence are organic, psychic, and atonic, of which the last is much the more common. In considering the atonic variety R. Guiteras (*N. Y. Med. Jour.*, August 11, 1900) divides it into the adynamic and irritative classes. The first may follow some injury or disease of the spinal cord or brain or some weakening disease, and the ejaculation is then feeble and accompanied with little sensation. The irritative form is said to be due to a congestion or inflammation of the deep urethra or its adnexa, which keeps the lumbar centers in a constant state of excitability so that ejaculation occurs at the moment of intromission or even before. Posterior urethritis, stricture, excessive venery, prostatitis and masturbation are given as causes of the irritable form, but the author maintains that in the majority of cases seminal vesiculitis is by far the most marked pathological condition present. On rectal examination the vesicles are found very tender and swollen. Careful massage will usually cause considerable detritus and inflammatory products to be squeezed out and passed off with the urine. The vesicles may also be dilated but have a pasty feel, or they may be thickened and indurated. The method of treatment is as follows: Internal remedies to neutralize the urine in cases of overacidity; rectal irrigation every night with normal saline solution or strained flaxseed tea at 105° to 120° F., by means of the double-current rectal tube, and massage of the internal organs every five days, followed immediately by a urethral irrigation whenever a chronic urethritis is present. After inflammation has been relieved strychnine and iron may be used or even damiana or phosphorus.

Significance of Uric-Acid Diathesis.—A. C. Croftan (*N. Y. Med. Jour.*, August 11, 1900) maintains that uric acid is not the materies morbi in uric-acid lesions, that it acts pathologically only from its tendency to form concretions. Its formation, far from being a process of self-intoxication, is a process of disintoxication and the real materia peccans in uric-acid lesions is the alloxuric bases. He does not believe that uric acid has a primary role in the causation of gout, for there are many cases in which concretions do not occur; however violent the inflammations may be, uric acid is never found in the exudate; uric acid is frequently found in the blood in quantities as large as those observed in gout and can be administered to the healthy animal without causing any toxic symptoms. The alloxuric bases are closely allied to uric acid, are readily soluble in the tissues, and are the result of excessive nuclein catabolism and reduced oxygenation. Their chief representatives are xanthin, hypoxanthin, adenin, etc., and they have highly toxic properties. Nuclein when broken down in the presence of sufficient oxygen forms uric acid, but if oxygen is withheld the alloxuric bases are formed in its stead. Thus with normal oxygenation we have formation and excretion of uric acid to the limit of the individual oxygenating powers and alloxuric bases corresponding to the excess of nuclein catabolism beyond the oxidation powers. Therefore this formation of uric acid is a conservative and protective process, occurring probably in the tissues and not in the kidneys. It is an insoluble non-toxic substance incapable of producing the vast array of symptoms usually attributed to it. On the other hand, the soluble alloxuric bases have been found experimentally to cause a train of symptoms similar to those present in cases of uric-acid diathesis. The alloxuric bases so alter the tissues by toxic and inflammatory changes that a field for the deposit of urate concretions is prepared, but these latter are merely secondary to the previous toxic changes. If, then, excessive nuclein catabolism and deficient oxygenation are to be made responsible for the formation of alloxuric bases a rational therapy must be instituted in three directions. (1) An attempt to increase elimination of toxins; (2) a reduction of nuclein catabolism; (3) an increase of the powers of oxygenation. The administration of alkalies has a beneficial effect, not only by neutralizing the excessive formation of acid, but by acting as a diuretic and thus eliminating the toxic materials. Dietary regulations are important. As a rule those foods rich in nuclein are not good, but boiled, stewed and fried meats are permissible and eggs and milk are suitable foods. To raise the oxygenating power of the blood we should increase the hemoglobin of the blood and supply as large a quantity of oxygen in the inspired air as possible. Iron in some form is usually demanded for the first requirement and the use of oxygen gas has been given a thorough trial by the author and found to satisfactorily meet the need for more oxygen in the inspired air. Experiments showed that oxygen inhalation decreased the amount of alloxuric bases in the urine and increased the uric acid. Several cases have been thus satisfactorily treated, but they have not been under observation for more than two years.

Vasectomy.—R. Harrison *(Lancet,* July 14, 1900) says that modern surgery appears to be entering upon a new domain of therapeutics, in so far that now certain operations are undertaken less and less except in the interests of life, because so often extreme physiologic results follow; for instance, the profound systemic effect of oophorectomy, thyroidectomy and double castration, renders these operations necessary only when nothing else can be substituted. In the case of castration, obliteration of the vasa deferentia and seminal vesicles may be substituted, and the author has never seen one bad result follow this comparatively simple procedure. It is true that it prevents more or less completely the sexual functions, but when a patient has once experienced or understood the urinary difficulties of the enlarged prostate, he never hesitates in the writer's experience to sacrifice the sexual for the urinary function. There are three classes of cases in this connection, *viz.*: (1) Those whom double vasectomy benefits permanently and fully; (2) those whom under certain restricted conditions it benefits; (3) those who derive no benefit from it. In the first category belong all those whose prostates are beginning to enlarge, whose bladders as containers and expulsors of urine have suffered no pathological changes and whose use of the catheter for residual urine has just begun. In these patients, as a rule, all the objective and subjective symptoms subside, the gland shrinks much, the cystitis, if present, subsides, frequency and dribbling cease and catheter-life either ended or postponed far into the future. Such are the real cures. As to the second set of patients, certain conditions obtain under which benefit may be temporary or lasting. Here the marked cystitis, vesical dilatation and atony, catheter-life, etc., have all persisted for some time. Hence the gland may slightly or greatly shrink, the cystitis improve, renal disease be avoided, the bladder as a container be made healthy but as an expulsor remain deficient and catheter-life must continue. Similarly the operation may alleviate or cure hemorrhage, spasm or tension after catheterism. In the last category come cases so far advanced that the only benefit may be improvement of the bladder as a container and hence danger of ascending infection avoided. This comes about by sufficient decrease in the enlargement to make catheterism easier. Beyond these three groups, the author claims that as a prophylaxis against recurrence of stone, this operation has great value. All cases may expect some change for the better, although the catheter may not be dispensed with. Similarly after removal of cataracts, spectacles may still be necessary, yet the good done is there. One of the cases enumerated is interesting because, owing to delayed results, a second operation was done and the ligatured ends of a resected vas was found united and the lumen restored. When torsion is done, this can not happen.

Obstruction of the Sigmoid Colon.—Not many years ago, states W. H. Battle *(Lancet,* July 7, 1900), tumors of the lower colon were treated solely by colostomy and no direct effort was made to remove the growth. To-day both procedures are done and often the ablation of the neoplasm has salutary effects. The history is as follows: Man, forty-one years old, admitted March 11, 1900, to the Royal Free Infirmary with intestinal obstruction. A fortnight previously there had been intense general abdominal pain, vomiting and obstruction, March 1st, the bowels opened, but since then only flatus in small amount had passed. March 4th, he went to bed with increasing abdominal pain; medicinal aids failed to relieve; vomiting of coffee-ground matter began on the 6th; no food possible except fluids in small quantity. Defined prostation, emaciation, distension and tympanites were present, but no tumor, no peristalsis; examination, *per rectum* negative. A left ingunial colostomy was done wth a well-formed spur formation. The patient did very well, discharging freely through the wound. April 6th, through a median incision a columnar-celled carcinoma of the sigmoid with mesenteric-gland deposits was removed. The ends of the severed bowel were turned in and lateral anastomosis done; complete recovery followed.

Hydatid Cyst in a Native Indian.—This appears to be among the first very few well-established cases of this disease in a native of India who never had left home, and is reported by W. J. Buchanan *(Lancet,* July 7, 1900). A native of Bhagalpur was sent to jail in August, 1896, whence he was removed to the hospital very shortly for fever and right-sided pain. On examination a large abscess-like tumor appeared in the right flank, without fluctuating area. Aspiration yielded a pint of fetid, thin, pus-like fluid. The abscess was then incised, irrigated and drained. Death ensued within a few days with high fever and prostration. At the autopsy the following gross lesions appeared: An enormous abscess cavity, extending from below the free border of the ribs to the vertebral column in the right lobe; a large ecchinococcus cyst of the diaphragmatic surface of the liver, in size like a baby's head, filled with daughter and granddaughter cysts and fluid. The diagnosis was confirmed by the discovery of booklets in the pathological laboratoy of the medical school at Calcutta.

Foreign Body in the Upper Air Passages.—The history of an instructive case is reported by B. Hamilton *(Lancet,* July 14, 1900). A boy, twelve years old, was playing with beans when his arm was suddenly struck and a bean in his fingers was forced suddenly into his mouth and inhaled. Violent spasms of coughing, bloody expectoration and some cyanosis followed, but the bean failed to dislodge. The attacks of coughing ceased and an examina-

tion showed that no air was entering the right lung while the left was acting normally. No trace of the bean could be seen by laryngoscopic examination. All efforts to dislodge the bean failed, thumping of the chest, inversion and emesis. Finally, quiet sleep came on. About twelve hours later a very violent spasm of cough came on, followed by deep cyanosis and unconsciousness. The trachea was quickly opened by an incision which relieved the cyanosis and the loss of consciousness and the bean was coughed out of the wound when it was prolonged downward. The bean was swollen by the moisture and might have caused sudden death by impaction in the trachea or larynx after having increased in size. Because the boy was quietly sleeping the family could not be induced to permit search for it, hence the delay in proper treatment.

Frontal Sinus Empyema.—The importance of diagnosis and proper treatment of this disease, says H. Tilley *(Lancet,* July 14, 1900), simply for the patient's comfort is great, to say nothing of the prevention of complications by an early cure. One important anatomical point must be borne in mind, namely, that, since the anterior ethmoidal cells, the frontonasal duct from the frontal sinuses and the antrum of Highmore all open into the middle meatus of the nose, the symptoms are somewhat alike and the infection may travel from one to the other. Indeed, there is often a mucous membrane fold so related to the openings of the ducts into the sinus and into the antrum as to convert the two into one continuous channel and make the avenue of infection direct between the two. In such cases it is difficult to say whether the antrums or the sinuses were the first diseased, and whether the former is purely a receptacle or the nidus of the pus. The sinuses, it must be remembered, vary greatly in size, laterally along the supraorbital arches, vertically and sagittally into the frontal-bone substance and, finally, downward into the nasal process itself. External body configuration unfortunately is not a guide to the size of thes cavities, but after examining one hundred and twenty skulls the author finds that a one-fourth-inch trephine placed midway between the middle line and a vertical let fall to the internal angular process and placed low down near that process will always open into the sinus, whether very small, very large or of usual size. There are three main symptoms of frontal sinus empyema: (1) a thin non-fetid purulent discharge, constant, apparent chiefly in the middle meatus; (2) discomfort, pain, sense of weight or fulness over the forehead; (3) more or less well-marked nasal obstruction due to polypi and granulation tissue of the chronic inflammation encroaching upon the nose. The differential diagnosis is important and must always be made with care, because the operation for the frontal disease disfigures somewhat and must not be undertaken unnecessarily. Since the antrum is much more commonly affected, all cases may be assumed as springing thence until the contrary is proved. To do this we may resort to transillumination, but better to tapping. This is done with a small trochar and cannula (Lichtwitz's) driven through the nasal wall of the antrum close to the floor just in front of and below the anterior end of the inferior turbinated bone. The ethmoidal cells may next be explored by breaking through their nasal walls, perhaps already egg-shell-like and necrotic by long disease. To determine whether the antrum contains pus as the source or the receptacle is very difficult. In general, the deeper the shadow under the eye in transillumination, the thicker the antral mucosa, which usually goes with long-standing local inflammation. The treatment may be merely irrigation through the nose which rarely does good, because thorough evacuation of the pus is not possible. Breaking into the sinus from the nose is not wise, because the work is in the dark, and meningitis has followed in its path, with death later. The best is the radical opening of the front wall of the sinus with the trephine, curetting away of all thickenings and establishment of a wide canal into the nose from above downward.

Fracture of the Skull.—E. F. L. de Jersey *(Lancet,* July 14, 1900) reports the following very interesting case of brain injury with paralyses, operation and recovery. A forty-five-year-old man, admitted to the hospital February 22, 1900, had been struck on the left side of the head on the 17th inst. with a six-foot pole about six inches in diameter. There were complete unconsciousness, entire right hemiplegia, retention of urine and of feces, temperature 102.2° F., crepitation over the center of the left parietal bone, no wound or discoloration of the scalp, but some pitting on pressure, effusion of blood over the ear, two black eyes from fist-blows and convulsions all over the right side on deep pressure upon the parietal bone. At the operation on February 22d a large skin incision was made from the frontal to the parietal eminence and a large stellate comminuted depressed fracture of the skull was laid brae. The depressed portion was removed and then the meninges and the brain substance beneath were found to be badly lacerated and a large fissure extended forward through the frontal bone and backward into the occipital, across the parietal. There was also a large hematoma which was left alone. At a point four inches from Reid's base line and on the normal to it two inches behind the external auditory meatus, namely, just behind the left parietal boss, was a cavity in the brain large enough to admit the little finger easily. The cavity corresponded to the upper extremity of the left fissure of Rolando and invaded the left ascending frontal and parietal convolution, chiefly the latter. The fracture lay over the whole motor area, which as a whole was more or less damaged as there was entire right hemiplegia of the face and

trunk and limbs and motor aphasia. After the patient regained the use of his tongue, he still had some aphasia left, hearing and comprehending everything, but not being able to answer rightly or quickly at times. The cavity in the brain had degenerating walls and was drained. A piece of bone was replaced and the scalp sutured. Recovery without suppuration followed. Before the operation the pulse was 40, respiration was feeble and inaudible and deep coma was setting in. Six hours after the pulse and respiration had much improved and the patient began it move his right leg. February 23d (the day after the operation) he was so restless as to require restraint, made signs for food and drink and said the word "No" several times. February 24th the right arm could be slightly raised; on the 25th it was freely movable and on the 28th consciousness had almost returned and speech was attempted. March 7th he could put out his tongue, though it deviated much to the right. Five days later he gave an account of his injuries to the police, although the aphasia still troubled him. April 2d he could walk about the ward and on the 10th was discharged cured. The order of the recovery from the paralysis was prominent—lower extremity, upper extremity, face, then tongue, in their order. As to the upper extemity the shoulder, elbow and hand motions came in this series, *i. e.*, the finely-coordinated functions last. Further those movements which the body does simultaneously on each side were least affected and earliest to recover. The upper face almost escaped, regained its action early and long in advance of the lower. The tongue was the last member to recover. The interesting data of the case are retention of urine before the operation, followed by incontinence alternating with it after it; fecal retention before, incontinuence, and later constipation after; rapid recovery after the relief of the brain pressure; signs of relief before the shock had gone; comparatively late return of consciousness; absence of ill effects of the cavity in the brain substance; no symptoms from the wide fissures above; and the life of a piece of bone one-half-inch square replaced although almost denuded of periosteum.

Cancroin in Cancer.—A. Adamkiewicz (*Therap. Monatshft.*, July, 1900) had under observation a patient with severe dyspeptic symptoms, constipation and loss of weight, in whom the diagnosis cancer of the greater curve of the stomach admitted of no doubt. Injections of cancroin every second day were at once resorted to. One month later all infiltration, tenderness and dyspeptic symptoms had completely vanished, but the constipation was on the increase and was accompanied by so much disturbance that the patient was obliged to take to his bed. Two weeks later severe hemorrhage with subsequent relief of constipation was noted. The author cites this case to prove in addition to the value of cancroin, the possibility of an inflammatory tumefaction of the cancerous deposits before their degeneration and absorption under the influence of the injection.

Chlorides in Pneumonia.—In an extensive research on the elimination of chlorides in the urine and sputum in acute lobar pneumonia Roehrich and Wiki (*Revue médicale*, June 20, 1900) find it of distinct diagnostic and prognostic value. Ten cc. of the mixed urine for twenty-four hours is evaporated with 2 grams of potassium nitrate, calcined, and acidified with nitric acid, and 50 cc. of water added. This is titrated with decinormal silver nitrate in the presence of neutral chromate of potassium. The yellow chromate of silver forms only after complete precipitation of the chlorides. The urine was tested in many febrile and lung conditions other than pneumonia. The chlorides in the urine of pneumonia diminish rapidly during the first day and more slowly for the next day or two, then remain at a very low figure, much lower than in any other fever, until defervescence. At the crisis, the chlorides become very abundant, but if defervescence is by lysis the augmentation is gradual. Any febrile complications, otitis, meningitis, pleurisy, etc., cause elimination. It is probable that the urinary chlorides diminish in direct relation to the extent of the consolidation, and the amount of chlorides, 0.5 to 4 grams a day in lobar pneumonia, serves to distinguish tuberculosis, bronchopneumonia, or sclerotic lung. Usually the chlorides become normal in one to four days after defervescence, and if they fail to rapidly increase the prognosis is bad. As the chlorides diminish in the urine, they constantly increase in the sputum. The amount in the urine is not affected by food or chlorides ingested; it is somewhat influenced by the degree of fever, but it is almost entirely dependent upon the amount of fibrinous exudate. After defervescence the amount of chlorides in the urine is about 20 grams a day.

Igazol in Pulmonary Tuberculosis.—A medical commission appointed to investigate the efficiency of this drug report as follows: (1) Igazol has no bactericidal action upon the bacillus of Koch. (2) It has no action whatever upon the course of the disease. (3) It cannot be considered in any way as a specific for pulmonary tuberculosis. (*Revista Medica de S. Paulo*, June 15, 1900.)

Abscess of the Liver.—O. Fausto (*Revista Medica de S. Paulo*, June 15, 1900) gives a clinical report of three cases of liver abscess. *Case I.*—Man, fifty-four years old; entered the hospital with high fever and intense pain over the hepatic region; four months previous he began to lose appetite and flesh; had intermittent fever, with frequent violent diarrheal attacks, accompanied by blood and mucus; a month later had pain localized over the hepatic region; with this, for the first time, he noticed a swelling in this

region. On examination at the hospital a fluctuating tumor, the size of a cocoanut, was found extending below the free border of the ribs. The treatment was intercostal incision in the axillary line, evacuation of a large quantity of pus, boracic acid irrigation and drainage, daily irrigation of abscess cavity. Improvement followed in all previous symptoms except the diarrhea, which persisted, until checked by intestinal antiseptics. At the end of a month the patient was discharged cured. *Case II.*—Man, thirty-six years old; in ordinary health until two weeks ago, when he had a violent diarrhea with blood and mucus; also a daily temperature and anorexia, but no pain until two days before admission, when pain in the right axillary region, at about the seventh and eighth intercostal space, became so intense that he entered the hospital for treatment. The pain was then so intense in the entire right thorax as to embarrass respiration; dyspnea was marked and the patient's face was anxious. Percussion failed to reveal any increase in liver dulness, nor did palpation show any enlargement; pulmonary auscultation revealed absence of vesicular murmur at the base of the right lung. It was impossible, until an aspirating needle was used, to determine whether a pleurisy with effusion existed. Pleurisy having been excluded, an operation in the mid-axillary line over the seventh intercostal space was instituted, but not until a resection of contiguous ribs had been made was the abscess found, deep seated in the liver; the discharge was copious and fetid. The same treatment as in Case I. resulted in a cure. *Case III.*—Man, thirty-two years old, gave an incomplete history; had had violent bloody diarrhea for some time; no history of liver pain; jaundice was marked; examination revealed large fluctuating tumor extending three inches below the free border of the right ribs; the patient's condition being poor, a preliminary operation was done; after adhesive inflammation was complete about the site of the operation the abscess was incised at the eighth intercostal space. Despite the usual treatment, diarrhea and fever continued unabated, and the patient died in a few days. Autopsy revealed an abscess cavity with many ramifications, involving almost the entire liver; the intestines were anemic, the mucosa being the seat of a fibrinous exudate; scattered throughout the large intestines were numerous ulcers, some superficial, others deep. The mesenteric glands were enlarged.

Benign Pyloric Obstruction.— F. Kammerer (*Annals of Surgery*, July, 1900) considers this condition as either acquired or congenital. There are two congenital varieties, (1) the peritonitic, consisting of a fibrous band representing the pylorus and adjoining duodenum and caused by fetal peritonitis usually of syphilitic origin, and (2) the hypertrophic, commonly ascribed to a hypertrophy of the circular muscularis and often involving in spasm the pylorus. The former type is usually fatal in a few days. There are in literature four gastro-enterostomies with two successes, and one pyloroplasty, also successful, for the hypertrophic type. Of the acquired stenoses the fibrous obstruction due to chronic ulcer, either by cicatricial contracture or by the formation of infiltration masses is by far the most common. Such infiltrations may simulate cancer and be so diagnosed until a gastro-enterostomy completely cures or a section disproves. Such a tumor in a patient of the author led to a gastro-enterostomy; five weeks later no traces could be found at a laparotomy. Ulcers caused by external violence and corrosive poisons may cause stenosis, but very rarely do. Acquired hypertrophic stenosis certainly exists and is probably caused by chronic catarrhal proliferation and thickening in the muscularis and connective-tissue coats. The pylorus may be, in the second case, obstructed by gall-stones, such a condition being always almost purely mechanical. A gall-bladder loaded with stones may by its size or by falling compress, stenose and block the pylorus. This is proved by absolute cure following evacuation of the stones. Or a peritonitis may accompany the cholecystitis and set up constricting bands. Fixation of a gall-bladder to the duodenum by inflammatory deposit may be followed by ulceration of the stones into the intestine, where by their size they block or by their irritation cause spasm and hypertrophy or ulcers and cicatricial contraction. Tertiary syphilis, especially gummata, may by situation along the lesser curvature or at the pylorus cause mechanical stoppage or, after breaking down, ulcerate, cicatrize, contract and stenose in that way. Benign tumors may obstruct, are frequently stated as causes of this condition, but in literature few instances are established. They are apt to be non-obstructing and may consist of adenomata, polypi, myomata, cysts, etc. Spasm of the pylorus may be permanent or temporary, is usually associated with hyperchlorhydria, decomposition and stasis of the stomach-contents. Permanent spasm may lead to pyloritis and genuine fibrous stenosis. Selection of surgical treatment rests between dilatation of the stricture, resection of the pylorus, divulsion of the pylorus, pyloroplasty and gastro-enterostomy.

Gastric and Intestinal Cancer.—B. F. Curtis (*Med. Rec.*, August 4, 1900) says the diagnosis of this condition rests on a number of factors. Constipation, either chronic in character or alternating with diarrhea, may be the chief symptoms; or a diarrhea of the muco-purulent type with no tendency to constipation may be the sole sign. Attacks of intestinal colic frequently recurrent, with or without subacute intestinal obstruction, form another definite clinical picture. As the case progresses these attacks come oftener and become more intense until almost

complete obstruction occurs, which finally yields to medical treatment. Blood, mucus, and pus in the stools, and occasionally ribbon- or pill-form feces are present, though many other conditions give rise to them. A bimanual rectal and vaginal examination must never be omitted. The significance of these symptoms is greater in the presence of age, emaciation, cachexia, vague indigestion, etc. Sometimes the tumor will be apparent before symptoms begin. Any patient presenting the above conditions must be subjected to repeated examinations in order that it may be determined when to operate. As to the situation of a tumor, exploration is always wise, when other means fail.

Enlarged Spleen with Cirrhosis of the Liver.—Cardarelli (*La Reforma Medica*, May 18, 1900) gives the history of a case not usually seen, that of a man, thirty-three years old, without any antecedent hereditary or personal history, bearing upon the illness which began with severe pain under the border of the left ribs; soon gastric disturbances began, followed by increased distention of the abdomen and scarcity of urine; physical examination showed an enlarged spleen, with a liver, reduced in size. Blood examination showed profound anemia. There was no edema of the extremities but the abdomen was greatly distended. The precedence of splenic hypertrophy with anemia without any exciting cause and the subsequent progressive atrophic cirrhosis, Cardarelli considers unusual, inasmuch as a like condition has been observed in but few cases in adults. A splenectomy was done, resulting in a subsidence of all acute symptoms and the arrest of the atrophic cirrhosis process.

Epithelioma of Pelvis of Kidney.—In reporting a case of this rare condition, A. O. J. Kelly (*Proc. Path. Soc. of Phila.*, July, 1900) states that nineteen cases have been recorded, all except two being over fifty years of age. There is scarcely a mucous membrane in the body so seldom the seat of tumors, as that of the renal pelvis and ureter. Those which are histologically papillomata seem to have marked malignant tendencies not found elsewhere, and recurrence after removal has necessitated extirpation of the kidney. The growth is large and villous and may be very extensive, even involving parts of the whole ureter and bladder as well as the renal pelvis. In several cases renal calculi were found, and it seems probable that these were causative factors in the production of the neoplasm, as are gall-stones in the production of carcinoma of the gall-bladder. The lesions are multiple, not spreading by continuity or contiguity, but appearing in patches in the urinary tract.

Hip Amputation.—T. F. Chavasse (*Lancet*, July 21, 1900) reports fifteen hip amputations on fourteen patients with four deaths. On one of the patients two amputations for tuberculosis were done, with a long interval between. Recovery followed and life was prolonged for a considerable time. The methods of choice for doing the operation he considers, first, the anterior and posterior flap; second, the external racquet (Fourneaux Jordan), and, third, the "gradual dissection" method. The last method is applicable in emergencies when few assistants are at hand. The femoral vessels are first ligated doubly and divided and all others as encountered. The anterior and posterior skin-flap are made from without inward and then all the soft parts are divided by dissection up to the pelvis. The means of controlling hemorrhage are, first and best, Wyeth's pins or, in children, ordinary iron skewers; second, aortic compression, carried out best in children with a pin-cushion over the aorta and a broad rubber tourniquet about the body. It has the disadvantage of hindering respiration and at times compressing the intestines too much. The third procedure is digital pressure on the femoral vessels as they cross the pubic bone by a skilled assistant. Shock is a very important element and is best combated by saline infusion just at the end of the operation.

Syphilis of the Eye.—No constitutional disease manifests itself so frequently by producing eye-symptoms as does syphilis, says P. T. Vaughan (*N. Y. Medical Journ.*, July 28, 1900), and in nearly half the cases the affection is of the iris, ciliary body, and choroid. The iritis may be plastic, serous, papular, or gummatous, and even when there are no visible condylomata, papules, or gummata on the iris, antisyphilitic treatment will meet with response. Sometimes gonorrheal or other infection of the eye may be coincident with syphilis, but in no degree dependent upon it. In plastic and serous iritis, the symptoms are pain, usually worse at night and aggravated by bright light, and impaired vision depending upon the degree of involvement of the ciliary body. The cornea may remain transparent in the rare cases of iritis without inflammation of the ciliary body; otherwise it is coated with exudate. The pupil is contracted and sluggish owing to congestion, exudation, and the attachment of the iris to the lens-capsule. There may be pericorneal injection. In syphilitic cyclitis we get in addition to the iris symptoms, precipitates in the vitreous, exudations between iris and lens-capsule, ciliary injection, and turbid aqueous humor. Hypopyon may be present. Cyclitis usually results in loss of vision. Syphilitic choroiditis is exudative and may be disseminated, central, or accompanied by retinitis. In the disseminated variety there is haziness of the vitreous, and circumscribed pinkish-yellow exudations in the choroidal tissue. In the central variety there is always an exudate in the region of the macula. In chorioretinitis the borders of the optic nerve are indistinct, the optic disk is hyperemic, and choroidal changes exist. Scotomata are frequent, and flashes of light with impairment of vision as the disease progresses, toward the macula.

Rapid Diagnosis of Rabies.—From a study of three dogs and three rabbits experimentally inoculated by subdural injections, M. P. Ravenel and D. J. McCarthy (*Proc. Path. Soc.* of Phila., July, 1900) report favorably on the early diagnosis of rabies by microscopic examination of the cord. The changes in the cells are a diffuse chromatolysis affecting all the cells, followed by a retraction of the cells from the capsules and a proliferation of the cells of the capsule. These press on the degenerating ganglion-cell, destroy it, and fill up the space occupied by it. The chromatolytic changes are best seen by Nissl's stain and the capsular changes by hematoxylin-eosin.

Eyeglass Habit.—Few people need to wear spectacles out-of-doors, writes N. B. Jenkins (*N. Y. Med. Jour.*, July 28, 1900), and by wearing them they induce weakness of the focussing muscles, so that the spectacles become a necessary evil. The easiest way to tell the need of glasses is to hold fine print sixteen inches away, look at it with both eyes, then with each eye separately. If the print seems the same in each case, and if ordinary reading for several hours a day causes no discomfort, the sight is normal. Some people, having been fitted with glasses, think they see perfectly, but use only one eye, and unconsciously suppress the retinal image of the other, which becomes amblyopic from lack of use. About one old person in four uses one eye in reading because of wrong glasses, for but little care is used in fitting old people. If after wearing glasses only a few days the print looks worse to the naked eyes than before the glasses do not fit. The best rule for the good of the eyes is, "Wear glasses as little as possible."

Hypospadias.—F. C. Valentine (*Med. Rec.*, July 28, 1900) reports a case of penile imperfection treated successfully by the method of Carl Beck, based upon the great distensibility of the normal urethra. The physical conditions were a sulcus in the ventral aspect of the glans penis representing the sides and roof of the fossa navicularis urethræ; several minute urinary fistulæ in the glans nearby, and the opening of the defective urethra about half an inch posterior to the sulcus. The steps of the operation are dissection of two lateral flaps from the ventral aspect of the corpus spongiosum and corpora cavernosa as far as the proximal third of the organ, outlined by a straight median incision through the skin and a circular incision at right angles to this just behind the sulcus of the corona. The exposed urethra is then dissected out of its bed with its corpus spongiosum for the length of that incision. The glans is perforated anteroposteriorly just dorsal to the defective fossa navicularis and the freed urethra and corpus spongiosum are drawn through this new bed and secured by stitches and the flaps replaced. Healing was prompt. An erection caused a tearing out of one of the meatus stitches, but this was easily replaced. A slight temporary incurvation followed, but after a short time normal coitus could be performed.

General Arteriosclerosis.—As an early definite and reliable sign of general arteriosclerosis, *La Semaine Médicale*, July 4, 1900, sets forth the practical early diagnostic point of accentuation of the aortic second sound heard best over the angle of the left scapula. Although in this disease various widespread signs may be present and especially the time-honored emphasis of the aortic second sound heard at its maximum over the true aortic area, yet such is not always the case, more particularly in the early onset when diagnosis is of more importance. Since any condition determining hypertension in the arteries, such as overactivity of the heart, may give the same aortic sign, an element of doubt is present in the early stages. Some authors claim that general arteriosclerosis differs from these many other states in having the increment in the sound also audible in the carotids and the supraclavicular regions. What has been pointed out by F. Friedmann of Vienna appears as a still better sign, namely, positive increment in the aortic diastolic tone at the level of the angle of the left scapula and in a line joining it with the seventh dorsal vertebral spine. Examination for it is best made while the arms are crossed over the chest and the hands placed each on the opposite shoulder to widen the interscapular space and while respiration is stopped during full expiration. This sign is of greatest diagnostic importance in patients young in years and early in the disease. As age advances the level of auscultation appears to descend and finally disappears even in the presence of absolute general signs of the disease.

Blood and Urine of Tubercular Subjects.—E. Maragliano (*Gazettè degli Ospedali e delle Cliniche*, June 24, 1900) believes that in the phenomena of tuberculosis there is an intoxication manifest which it would be impossible to attribute to the local morbific process, and which must be attributed to the intoxication of the organism by the products of tubercle bacilli. Starting with this as a working hypothesis he instituted a series of experiments as to the toxicity of the blood and urine of tubercular subjects. White mice were injected with the blood of tubercular subjects whose tuberculosis was not well advanced, others with the blood of subjects with marked tubercular symptoms, and others with a glycerin extract of the serum of tubercular subjects. A specially-precipitated prepared extract of the urine of tubercular subjects was also experimented with. From these researches he concludes (1) that the fresh blood and the glycerin extract of serum of the blood of tubercular subjects and the precipitated prepared extract of the urine all exert a toxic action on the animals experimented upon; (2) that the toxic action manifests itself with all the phenomena of tuberculosis, and (3) that the toxic action may be neutralized by tubercular antitoxin.

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TO LIMIT DISPENSARY ABUSE.

From present indications, as seen by those who are connected with public dispensaries, the act passed by the New York Legislature to prevent the abuse of the privileges offered by dispensaries has as yet produced no marked results. Men and women still go to the dispensaries, demand free treatment, and unblushingly deny their ability to pay even a small fee while admitting an income perhaps of from $8 to $25 per week! Policemen, letter-carriers, street-railway employés, all in uniform, come and demand free treatment, as well as the well-dressed woman who is seen to remove a handful of diamond rings from her fingers while sitting in the outside waiting-room. The police, letter-carriers, and street-railway employés have all their own society or corporation physicians, but as would-be patients at a dispensary they "don't like the company doctor."

There is no diminution in the number of applicants for medical charity, nor is there apt to be as long as any dispensary has to show a large number of non-paying patients treated as a reason for its existence or in order to secure its share of public charity funds. The real harm done by free institutions is not that a few mendacious, mean, well-to-do impostors get free treatment, but that the whole wage-earning class of the community is gradually being taught that medical attendance is something they should receive for nothing and that there is no cause for shame when they pauperize themselves by begging for it.

There lies before us as we write a circular letter, entitled "A Practical, Effective and Humane Method for Limiting Dispensary Abuse." The writer gives his experience in what he calls a new method of meeting the dispensary evil and asks the cooperation of such physicians as approve of his method in extending the work. For two years the writer of this letter conducted in New York City a free eye dispensary at an annual expense to himself of $2000. During the last year of that time 1715 patients applied for free treatment. About 10 per cent. of this number were proper dispensary patients. About 3 per cent. were refused treatment as they were plainly people who should have been ashamed to ask for it. The remaining 87 per cent. consisted of wage-earners whose average income was from $8 to $25 per week. They were mechanics of all sorts, book-keepers, stenographers, domestics, dressmakers, city employés, letter-carriers, clerks, salesmen, widows and unmarried women living on small but sufficient incomes. The 10 per cent. pauper element of the patients was probably benefited by this charity. The 87 per cent. of the patients, who were neither paupers nor millionaires, surely had their independence and self-respect undermined by the alms-receiving, and received more damage than if they had paid a moderate fee, even if it necessitated some self-sacrifice and economy. The writer feels sure that this class of people dislike *at first* to go to a charitable institution and would prefer to pay a moderate fee if they knew where such a fee would be charged.

At the end of two years the free dispensary was discontinued and an eye, ear, nose and throat "sanatorium" opened in its place. A conspicuous sign was placed at the entrance stating that the sanatorium was a *non-charitable* institution and that a reasonable and moderate charge would be made for examination and treatment. The writer states that during the year 1555 eye patients alone received treatment there and paid a reasonable and moderate fee. These patients were of the same class as those who formerly made up the majority (the 87 per cent.) and in many cases were the same individuals, and they gladly paid from fifty cents to two dollars for ex-

amination and one to five dollars per week for treatment. These patients paid the writer nearly $3500 during the year, which he considers better for him and also for them than free treatment. The greatest gain he thinks consists in the fact that over 1500 patients, all of whom would have degenerated into dispensary paupers, are still untainted by alms-receiving. The above figures do not include patients of that class who require no special consideration as regards the fees charged.

The writer believes his experience proves that the wage-earners who are now being treated free at nearly all the larger hospitals and dispensaries would gladly pay fees if there were places where they could go and pay according to their income without too great a sacrifice. As a remedy for the dispensary evil he suggests that such places be established where this class of people can go and pay what they can, and that such payment be insisted upon. Sanatoria for the rich are many and it is not considered unethical for them to let their existence be known, therefore the writer concludes that it can be no more unethical for sanatoria where the prices are adapted to the incomes of nine-tenths of the population to let themselves be known.

The experience of this physician seems to show that a majority of the wage-earners who apply for free treatment at dispensaries would be willing to pay a small fee. If this is so and places were established where treatment could be obtained for low fees, it might lessen the number of *new* patients of this class at free dispensaries, but would it diminish the attendance of the many thousands who have been for a long time, and are still, receiving free treatment? There are many physicians now giving their services for nothing in free dispensaries who surely would be glad of an income of $3500, even if made up of fees ranging from fifty cents to $2. We know nothing of this physician who thus obtains an income of $3500 from people who would otherwise be free dispensary patients, but the scheme is a good business proposition and saves many from the demoralizing effect of alms-receiving.

LAWS GOVERNING THE EXPENDITURE OF NERVOUS ENERGY.

So much rests upon an exact knowledge of the laws underlying fatigue and invigoration of nervous matter that investigations for determining the same are very important. The inherent difficulty in determining definitely the amount of fatigue produced in nervous tissue by different causes is considerably more than in other tissues. This information can be obtained best in experimenting upon isolated nerves, by the electrical method, using the galvanometer as an index. Such experiments conducted upon nerves specially treated by drug preparations were first carried out by Waller in 1896, and in a recent résumé before the London Neurological Society (*Brain*, 1900) upon the excitability of nervous matter, this author has given us some very instructive data upon the exhaustibility of medullated and non-medullated nerve-fiber. In consequence of non-medullated grey matter being without a nutrient sheath it is rapidly exhausted, while on the other hand, nervous matter of the same composition, but protected with a medullated sheath, is rapidly reinvigorated by its white envelope; such nerves and their sheaths are found to act and react upon one another for support and nutrition. Waller holds that the waste matter of the one is raw material for the other and that they exist as a striking illustration of complementary nutrition. As a proof of the nutrient power of medullated nerve-sheath, the first stage of the well-known change of Wallerian degeneration can be cited in which the primary destruction in the nerve-fiber after separation from its cell occurs in the nerve-sheath. Waller studied the laws governing the exhaustion and restitution in nerve-tissue under the action of veratrine and protoveratrine, two alkaloidal constituents of green and white hellebore respectively. Curiously enough, although these two drugs are closely allied chemically, the one, veratrine, acts upon muscle and the other, protoveratrine, has its action upon the nerve; their respective actions upon these two tissues are similar. Protoveratrinized medullated nerve under stimulation undergoes exhaustion rapidly, as the power of restitution is then stopped by the drug.

By means of electrical experimentation upon the retina, Waller establishes the ratio between physical stimulation and physiopsychologic effect. This cause-effect curve from stimulation is sigmoid in form; that is, the effect from stimulation is at first slight, then increases rapidly, then slowly once more, and finally ceases altogether. A practical application of this is seen in normal physiologic psychology. The student learns the primary facts about a new subject very slowly at first and with great difficulty, then, as he gains momentum, he accumulates knowledge more rapidly, then progress begins to slacken and finally ceases almost entirely as ultimate per-

fection is reached. It is well known that the last steps in the passage from the realms of mediocrity to more or less perfect attainment are the costly ones, therefore the most expensive efforts in the performance of a task from the standpoint of energy, are its beginning and its ending.

We infer from Waller's experiments that the special exhaustible points of the neuromuscular chain are its non-medullated portions, the cerebral and spinal cells and the motorial end plates. Therefore, to correct or to prevent the ill effects of physiologic and psychologic nerve-exhaustion, we must of necessity direct our attention toward strengthening these vulnerable points.

ECHOES AND NEWS.

NEW YORK.

Contagious Diseases.—For the week ending August 11, 1900: Measles, 55 cases and 5 deaths; diphtheria, 177 cases and 27 deaths; laryngeal diphtheria (croup), 2 deaths; scarlet fever, 48 cases and 3 deaths; smallpox, 1 case and 1 death; chicken-pox, 3 cases; tuberculosis, 166 cases and 161 deaths; typhoid fever, 60 cases and 16 deaths; cerebrospinal meningitis, 9 deaths. Totals, 510 cases, 224 deaths.

Bequest to Hospital.—The Geneva City Hospital, of Geneva, N. Y., will receive $10,000 by the will of Judge Francis O. Mason. Upon the death of two sisters of the deceased it will receive $80,000 additional.

New Infant-Asylum Building.—The Board of Managers of the New York Infant Asylum have filed plans for a four-story brick asylum building, estimated to cost $100,000, to be erected on a plot 100 x 56, on the northeast corner of Amsterdam Avenue and Sixty-first Street. The building will be constructed with a view to adding three stories in the near future.

The Elmira Reformatory.—Sensational stories are afloat that Acting Superintendent Robertson and Assistant Superintendent McDonnell have resumed the punishment of prisoners in a form more severe than that which obtained under the Brockway régime. Acting Superintendent Robertson says that it is true that some of the incorrigibles have been punished, and that all prisoners who refused to obey the rules of the institution would be properly taken care of in this direction by the management. He said that those who had refused to work or drill had been "stood up" and handcuffed to the doors of their cells facing the interior, hands behind the body. This method of punishment, Dr. Robertson said, was adopted three days after he had been appointed Acting Superintendent, and had been found very satisfactory. The report that paddling had been resumed, he said, was without foundation.

PHILADELPHIA.

Increase in Typhoid Fever.—Residents in the northwestern section of the city are becoming concerned over the increase of typhoid fever. The various hospitals have more than their usual quota of fever patients and physicians note the increase in private practice. The cause is as yet a matter of conjecture.

Accidents to Ambulances.—The Germantown Hospital ambulance and that of St. Joseph's Hospital were both partially wrecked August 9th. The former collided with a trolley car and the latter ran into an excavation. Fortunately the physician, driver, and patient in each instance were but slightly injured by the accident.

Christian Scientists.—Judge Pennypacker has refused to grant a charter for a church of Christian Scientists. The reason given for the refusal was that the law of the State to protect the public from illicit medical practice must be upheld. The *Times* says: "What we want as a next step is a court that will deal with Christian Science 'healers' in the same spirit."

Conjunctivitis.—The catarrhal form of this disease is prevalent in the city and is rapidly spreading. The fine dust from asphalt pavements is said to be the cause. Just why this should give rise to what threatens to be an epidemic at this time is not clear.

Health Report.—Deaths in the city for the week ending August 11th were 452, an increase of 13 over those of the previous week and an increase of 7 over the corresponding week of last year. There were 2 deaths from cerebrospinal meningitis, 47 from cholera infantum, and 3 from sunstroke. There were 131 deaths under one year of age and 23 over 80 years. Deaths from contagious diseases: Diphtheria, 7; typhoid fever, 2.

CHICAGO.

Public Health Notes.—In the last week of July, for the first time in any week since that which ended December 28, 1898, there were no deaths from scarlet fever reported to the Bureau of Vital Statistics. In the intervening period of 83 weeks there were 712 deaths from a disease which had been so steadily diminishing for fifteen years that, as was said in the March, 1899, monthly bulletin, "seemed as though scarlet fever were fast losing its evil significance for the sanitarium and health authorities." In the same connection it was also said that "the virulence of the present type and its increasing mortality portend an extension of the disease to epidemic proportions." This apprehension of the department has, happily, been only partly realized.

Great Infant Mortality.—The terrible infant mortality of summer is due more largely to uncleanliness in the house and its surroundings than to any other one cause, and parents or heads of households have direct and important duties

in this respect. Wholesome food for the young cannot be furnished from an unclean, sour-smelling kitchen. Healthful sleep cannot be had in a foul, unventilated bedroom. Parents should therefore keep their houses clean, especially the kitchens and the sleeping-rooms.

Mortality Report.—The mortality for the week ending August 4th was 484, compared with 438 of last week, and 465 for the week ended August 5, 1899. Acute intestinal diseases head the list with 136 deaths. This increase is due probably to high temperature rather than to impure water, as is shown by the increased number of deaths of infants. Consumption carried off 42, but usually heads the list in winter; next come heart and nervous diseases, each with 32 deaths; pneumonia, 19; sunstroke, 2.

Medical Colleges and Universities.—Dr. I. N. Danforth, of this city, in an interesting article on this subject in the August issue of the *Medical Standard*, says that the medical schools of Chicago have conferred quite as much credit and honor upon the universities with which they are connected as they have received from them.

GENERAL.

Losses and Sickness in the Philippines.—The losses of our troops in the Philippines since August 6, 1898, are as follows: Killed, 587; died of wounds and accidents, 353; died of disease, 1539; total deaths, 2479; total wounded, 2315; grand total, 4794. The following is General MacArthur's official report of the ill in his entire army on July 31st: Ill in hospitals, 3755; ill in quarters, 1081; percentage, 8.04.

Mrs. Eddy and Eddyism.—Impelled by the curious and unique necessity which compels the self-styled "Christian Scientists" to make constant denials that their high priestess is either dead or dying, they have just persuaded—"persuaded" is a good, safe word—the *Boston Globe* to publish a long article in which Mrs. Eddy is described as trotting agilely from room to room and from floor to floor in her Concord home, and is quoted as assuring the interviewer that her health is as perfect as her philosophy—price by mail, $3.18. —*N. Y. Times.*

Obituary.—Dr. Carl M. Kelley, Coroner of Pike county, Pa., fell dead at his home, in Matamoras, August 11th, from heart disease. He was born in Scranton, Pa., thirty-eight years ago, and was graduated from the College of Physicians and Surgeons at Baltimore in 1883. He practised in Scranton, then New York, and settled in Matamoras two years ago. His father was Dr. Thomas Kelley, of Scranton, and both of his grandfathers were physicians. He had five brothers in the medical profession, two of whom are living. A widow and one son survive him.

The Plague.—The four cases that were recently reported in London were efficiently handled, two died and two are still in hospital at the mouth of the Thames. The case at Hamburg occurred in a sailor from South America and therefore was free from any suspicion of invasion from the East whence immigrants to America embarking at that port come.

The "Solace" Sails.—The "Solace," bringing home the sick and wounded from China, sailed August 13th from Yokohama for Guam, which will be her first stopping place on her homeward trip.

The London College of Physicians.—A lively correspondence has been going on in the columns of the *Medical Press and Circular* as to whether fellowship is bestowed by this corporation *honoris causa* or as a matter of favoritism. The *Press* evidently holds to the latter view and in a recent editorial says: "The truth of the matter is that the constitution of the Royal College of Physicians of London is a survival of traditions that can be no longer tolerated in a democratic age. The days of close corporations are numbered, and this ancient College would do well to bow to the inevitable, and anticipate the reforms that must sooner or later overtake all irresponsible government of the kind."

Home for Soldiers at Manila.—Encouraged by the wife of Governor Stanley and other ladies of Kansas, a proposition has been made to establish at Manila a home for the soldiers of the United States, somewhat after the fashion of the Christian associations and similar efforts in this country to counteract degenerating influences, the home to be called the Clara Barton Home, and to be established under the sponsorship of the National Red Cross Society, though it is also proposed not to involve that society financially, but to obtain contributions for the support of the home from those States from which have been recruited volunteer regiments now in the Philippines.

The British Medical Association.—The new constitution which the Council had prepared, and which many believed it had intended to railroad through at the general meeting, met with a cold reception. Instead of being promptly adopted as the Council had expected, it was referred to a committee of twenty-four to consider and report upon the best means of reorganizing the constitution of the Association, twelve members being nominated by the Council and twelve by the general meeting—the whole twenty-four members being eventually elected by the members assembled in general meeting. It has been decided to hold the next annual meeting of the Association at Cheltenham, and Dr. G. B. Ferguson has been appointed President-elect.

An Obstetrical Fraud.—A French contemporary relates an instructive story of a young physician who was visited by a woman presenting the external signs of pregnancy. She engaged him for the approaching confinement and left. A few months later the physician was summoned to his patient, only to find the infant not only born, but washed and dressed. He was gently chided

for his slowness in responding to the summons, and was requested as a particular favor to call at the registration office for the purpose of registering the birth. Anxious to reestablish himself in the good graces of his patient, the physician did as requested, leaving the house without examining either mother or child. We may judge of his surprise and dismay when, some time after, he was prosecuted by the State for aiding and abetting in a fraud by having made a false declaration as to the birth of a child. It turned out that his patient had not been pregnant and consequently had not borne a child; but had presented her physician with a supposititious one and made him a guileless partner in her attempt to fraudulently acquire some property. Fortunately for the young man, M. Brouardel interested himself in his case and the prosecution was dropped; but the fraud is one against which, in its protean form, the young and inexperienced practitioner requires to be put on his guard.—*Press and Circular.*

The Hospital Break-down in South Africa.—The *Practitioner,* in commenting on the unfortunate epidemic of typhoid and its disastrous consequences in the British Army, ascribes the responsibility to the quartermaster's department—the department that was responsible for the shortcomings in the Spanish-American war. Hints are also thrown out that the havoc wrought by typhoid, which is preventable, may be attributed to the convenient scapegoat "continued fever." "It has been hinted that the typhoid mortality in Lord Robert's force would by and by be diluted with 'continued fever.' Curiously enough it appears from a paragraph under the above heading which appears in the *Homeopathic World* of July 2d, that the all-conquering field-marshal is a devotee of homeopathy. As such 'Bobs' may be assumed to be a believer in the potent effect of infinitesimal dilution. My Hahnemannian contemporary adds that many of Lord Roberts' staff are to its knowledge homeopaths like himself. We may therefore expect the dilution to be carried out with the highest skill."

An Asiatic Woman an M.D.—The first Eastern woman admitted to the Licenses of the Royal College of Physicians and Surgeons, Ireland, received her diplomas last week. The lady is a Parsee named Miss Aunnie M. Treasurywala, and she appeared at the capping ceremonial in the full costume of her caste. It is said that she made a most brilliant examination for her final, having been the only candidate who passed with honors.

London Organizes a Pediatric Society.—The Society for the Study of Disease in Children was formally incorporated at a meeting held on July 24th at the house of the Royal Medical and Chirurgical Society. Dr. Arthur E. Sansom was in the chair and there was a fair attendance of those interested in the movement. The officers and council of the new society are as follows: Hon. Treasurer, Mr. Clement Lucas. Council: Mr. H. G. Armstrong (Wellington College), Dr. Henry Ashby (Manchester), Dr. Fletcher Beach, Dr. George Carpenter, Dr. Edmund Cautley, Dr. Wayland C. Chaffey (Brighton), Dr. Arthur Downes (Local Government Board), Mr. Walter Edmunds, Dr. Theodor Fisher (Bristol), Dr. Leonard Guthrie, Mr. Robert Jones (Liverpool), Dr. David B. Lees, Dr. Lewis Marshall (Nottingham), Dr. John McCaw (Belfast), Mr. D'Arcy Power, Dr. Humphry D. Rolleston, Dr. A. E. Sansom, Dr. George E. Shuttleworth (Richmond), Mr. Harold J. Stiles (Edinburgh), Dr. George A. Sutherland, Dr. James Taylor, Mr. Alfred H. Tubby, Mr. William H. Vickery (Newcastle-on-Tyne), Dr. Dawson Williams. Honorary Secretaries: Mr. Sydney Stephenson (London), and Dr. Charles H. Willey (Provincial). The new society already numbers upwards of eighty original members.

CORRESPONDENCE.

A FATAL CASE OF "IDIOPATHIC TETANUS."

To the Editor of the MEDICAL NEWS:

DEAR SIR:—Will you permit me to put on record in your valuable journal the notes of the following case: The patient, Alois M., a Bohemian, age fifty-three years, had suffered June 25th until the 28th of this year from quite a severe attack of intermittent malaria; began feeling better and went to work in the hot sun when yet weak from his attack. July 3d he worked in a hot cornfield, getting wet in a shower of rain, and this same exposure was repeated during the forenoon of July 4th, yet he ate a good dinner on that day. At 5 P. M. I was called and found his neck perfectly stiff, jaws set very tight, no temperature, pulse 80; while I was there he broke out into a profuse perspiration; he was then unable to swallow any medicine. A hypodermic of morphine and chloral and bromide, given later, did not relax the spasm of the muscles. The patient died July 5th at 3 A. M. from asphyxia. I did not make a second visit and there is no record as to whether the temperature rose later. The patient had received no wound or scratch of late.

F. H. NEUHAUS, M.D.

Schulenburg, Texas, July 31, 1900.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

BACTERIOLOGY OF TROPICAL DYSENTERY—OF YELLOW FEVER—OF DIPHTHERIA—THE MOSQUITO AND MALARIA—ANURIA SECONDARY TO CYSTITIS—PORRO-CAESAREAN HYSTERECTOMY—OPTIC NERVE TUMOR.

W. OSLER presided at the meeting of June 30th of the London Pathological Society and S. A. Flexner (Philadelphia) made the following points as to the bacteriology of dysentery and yellow fever. There are the acute and the chron-

ic forms. The acute type may be fatal in forty-eight to seventy-two hours, or end in complete recovery, or go on to the chronic disease. The chronic dysenteries of the tropics are *per se* amebic, while the acute is due to a bacillus differing from the common intestinal flora, agglutinating with the serum of dysenteric cases, resembling somewhat in action, but differing in biological and physiological properties from the bacillus typhosus, but apparently identical with the organism isolated from dysenteric cases at Manila and in Porto Rico and with that found by Shiga in the form of disease endemic in Japan. As to the yellow-fever bacillus he said that the widespread fatty and hyalin degenerations are not peculiar to this germ but may be caused by others.

L. Cobbett (Cambridge) showed cultures identified with certainty as the bacillus diphtheriæ taken from a pony which had suffered from a sero-purulent, sanguineous nasal discharge and probably been the source of infection of a girl-patient whose father owned the animal. The diphtheritic toxin is also excreted in the urine, as Dr. Cobbett showed in experiments with susceptible animals. The urine was injected beneath the skin and a variety of toxic effects or death followed. Control experiments with urine from the same normal animals or from diphtheritic animals after mixing with antitoxin proved the proposition.

H. F. Nuttall (Cambridge) gave a demonstration of the relation of the mosquito to malaria, consisting in an exhibition of the developmental stages of the avian and human species in the Culex and Anopheles respectively, and of specimens, photomicrographs and drawings. Living specimens of the Anopheles and Culex caught near Cambridge were shown in tanks, and their biology discussed. Maps of the distribution of malaria now over the world and formerly over England and of that of the genus Anopheles, so far as known, were shown, with the remarkable agreement between them. Development of the human parasite in the Anopheles had in nine species succeeded (India, Africa, Italy and the United States), while in ten of the Culex it had failed (Italy, Africa and India). Possibly a variety will be found to do it. The absence of malaria and the presence of the Anopheles in England are still to be explained definitely, but possibly on the ground that the mosquitoes are relatively few. It appears that great numbers are needed.

At the meeting of the Edinburgh Obstetrical Society, June 27th, L. Lackie reported a case of non-obstructive urinary suppression following cystitis. Eight years ago the patient had chronic cystitis, which did not yield to irrigation, medicinal, or dietetic treatment. The urethra was divulsed for exploration, but never regained its function although the symptoms were abated and a rubber urinal made the patient easy. In March, 1900, he was called in to treat her for vomiting and anuria. Hot packs and diuretics stimulated a free flow for eight days. Then without symptoms of uremia the patient died. At the autopsy were found an atrophic tube-like bladder, a right acute septic nephritis and a left degenerated caseated tuberculous kidney.

N. T. Brewis read notes on a Cæsarean section followed by a subperitoneal hysterectomy. The patient had a contracted pelvis with a true conjugate of two and one-half to two and three-quarter inches; one pregnancy had ended in stillbirth by forcible use of the forceps; two had terminated by early abortion; a fourth by basilysis at term, and the fifth as above because subsequent conception had to be guarded against. The other operations which might have been considered were symphysiotomy, Saenger's Cæsarean section, Porro-Cæsarean operation, Cæsarean operation followed by panhysterectomy or by subperitoneal hysterectomy. He had done two Porro-Cæsarean sections and four panhysterectomies, all successfully, and considered the latter as easy and less risky than the former, so far as hemorrhage and sepsis go, although less rapidly done. He decided against improved Cæsarean section because of the dangers of a gaping uterine wound, hemorrhage and peritonitis, and of the conditions analogous to the normal puerperium. There was little to decide between panhysterectomy and subperitoneal hysterectomy. Having had experience with the latter in fibroids he chose that. A living child and mother resulted. The same author read a few remarks on irrigation in laparotomy and stated that when necessary the vagina should be opened in the posterior fornix to permit exit of the washings and drainage of the pelvis.

J. W. Ballantyne gave the clinical report of a case of eclampsia, treated with veratrum viride and saline infusion. After a normal pregnancy and childbirth, at the sixth month of her second, for a month previous to the eclampsia the patient had noticed swelling of the feet and during a week previously great paleness of her urine. The onset was preceded by great epigastric distress and violent headache. The fits were controlled by chloroform and enemata of chloral hydrate with potassium bromide and hypodermatic injections of veratrum viride. One and one-half pints of saline infusion were injected beneath the breasts, several ounces of urine were soon drawn off containing two-thirds albumin, much blood and many epithelial tube casts. The urine before the fit had contained two-thirds albumin but nothing microscopic. Abortion was at once induced, labor taking place normally without any more fits, of which there had been a total of eighteen. The child was alive, hence death of the fetus could not be invoked as a cause of the eclampsia. Rapid and complete recovery followed. In a week the urine had a trace of albumin; in sixteen days there was none. Specimens of the urine were taken before, during, and for four days after the convulsions, and without special precautions put into corked bottles. Three weeks after they were in the following state: The last

four were alkaline and decomposed; the first was still acid, but beginning to decompose; the second and third were still acid and normal. In the discussion it was suggested that some substance associated with eclampsia preserved the specimen or that the chloral had. The earliest specimen, however, was obtained before any chloral had been given

At the Royal Academy of Medicine in Ireland, May 11th, Taylor described his new operation for cleft palate. The great feature is observance of the main nutrient vessel coursing from the posterior palatine foramen along the base of the alveolar process forward. The steps of the technic are as follows: Rose's position on a low table; saliva and blood pumped away by suction apparatus; all possible sponging avoided; a curved bilateral incision from the last molar tooth behind to the middle line in front back of the incisors, thus including in the flap the main trunk of the posterior palatine artery; freeing of the flaps from each side by means of a rugine, not of a raspatory as so often recommended; retraction of the freely-loosened flaps and division of the union of the hard and soft palates with the knife or curved scissors; suture of the carefully-pared raw edges with silver wire or with sikwormgut; division laterally near the hamular process of the soft from the hard palate to relieve tension, if necessary. Union is prompt and complete as a rule.

A. Routh, at the London Obstetrical Society, July 5th, read a paper on Porro-Cæsarean hysterectomy with retroperitoneal treatment of the stump for uterine fibroids obstructing labor. When the patient was first seen a large fibroid filled the true pelvis and displaced the cervix up out of the pelvic strait and reach; about the thirty-fourth week it was drawn up out of the pelvis, but another fibroid combined with it to obstruct the descent of the head absolutely. On this account Porro-Cæsarean operation was selected instead of a panhysterectomy or a Cæsarean section with removal of the appendages. The steps of the operation were: A median exposure of the peritoneal cavity between the symphysis and the umbilicus; incision of the uterus just posterior to the left broad ligament, which presented at once in the wound with the fibroid at its right; stripping off of the placenta, which was under the opening in the viscus; division of the membranes; extraction of the child; traction of the uterus into the wound; completion by Baer's method; recovery of both parent and child. Except in cases of cancer of the supravaginal cervix, it is a point worthy of discussion, whether this Porro-Cæsarean operation with retroperitoneal treatment of the stump is not safer for the patient than the Saenger-Cæsarean operation with a removal of part of the appendages, whenever abdominal section is needed for cases of delivery *permanently obstructed*. Whenever a viable mother and child were to be obtained the cases could be separated into three groups, *viz.*: (1) Those in which a Porro operation or a panhysterectomy with or without the preservation of one or both ovaries is absolutely indicated; (2) those in which a Saenger-Cæsarean operation with or without sterilization can be done; (3) such as may be treated well by either method. The indications for the first series are uterine fibroids. Cicatricial vaginal stenosis with arrest of lochia, septic endometritis, decomposed fetus, uterine inertia after hemorrhage of a Cæsarean operation, extensive uterine damage by efforts to extract the child *per vaginam*. The Saenger-Cæsarean method without sterilization is required when the mother desires to have another child; with sterilization when cancer has invaded the supravaginal cervix. The last group comprised such patients as had contracted pelves. In these any method might be adopted, but the choice seemed to rest with the modern Porro.

A. L. Gallabin termed this operation Baer-Cæsarean, because the original Porro does not suture the peritoneum over the stump and drop the latter into the pelvic cavity. He considered it the best operation for such conditions, not complicated by pregnancy nor by the presence of fibroids, indeed, a good substitute for a Cæsarean section for any purpose. He desired to know how severe the hemorrhage had been before the ligation of the ovarian or the uterine vessels.

P. Horrocks agreed in the choice of operation for this particular case, but in general he thought a Cæsarean section, with removal of a segment from each tube to sterilize the woman, much the best operation. At the same time no fixed rules can be adopted but judgment during the operation must be used. In general, too, he always leaves both ovaries in place.

W. R. Dakin said one ovary left behind will keep the woman in health. Certain dangers attend leaving the uterus sewn up, notably infection of the peritoneum through an imperfect wound or adhesions of the uterus to the parieties and subsequent incarceration of the intestines in the spaces so made. Hence, he preferred the Porro method and believed it does not increase the shock.

H. Spencer agreed that the best operation for the case had been done, but considered the method of dealing with the stump not without some dangers, namely, infection of the general peritoneal cavity through the vagina and adhesions between the suture-line and the intestines, causing finally obstruction. This happened in one of his cases. Again, sterilizing the patient he considered not justifiable from the moral point of view. The conservative Cæsarean section he always favored. Adhesions between the parieties and uterus often shut off the peritoneal cavity so that a second or third operation can be done. He had such a case in which under local anesthesia through scar-tissue and adhesions he delivered a third living and healthy child while two others had died. Here the general peritoneal cavity was not opened.

J. H. Targett on the other hand considered any Cæsarean section without sterilizing the patient unwarranted and always preferred a hys-

terectomy when practicable. He showed the specimen of a uterus taken from one of his patients. Two years after a Cæsarean section for impacted shoulder, she ruptured her uterus through the old scar and the child and placenta were found free in the abdominal cavity. Recovery followed.

A. Doran said that retroperitoneal treatment of the stump is best if skill and time are present, otherwise the old Porro-Cæsarean operation had best be done. Panhysterectomy is a still lengthier operation.

Routh in closing said elastic ligatures were not needed in this case. Prompt clamping of the vessels prevented much hemorrhage.

C. D. Marshall at the Ophthalmological Society, July 6th, read the report of an autopsy on a case of optic-nerve tumor in which the orbital cavity was cleaned out in 1897. In fair health until just before death in May, 1900, she showed the following conditions: Great distention of the middle meningeal vessels; enlargement of the Pacchionian bodies; flattening of the convolutions and replacement of the chiasm by a diffuse, soft tumor, of bantam-egg size, of ill-defined limits, and so soft that a stream of water would have washed it away, centred on the right optic tract, spread along the chiasm, involving the left optic tract and nerve (both of which were much enlarged), extending to the pons and third and lateral ventricles, involving the left optic thalamus and corpus striatum, including the third, fourth and fifth nerves of each side, invading the lower surface of each temporosphenoidal lobe, recently hemorrhagic and broken down in the region of the left optic tract and without separate brain deposits. Microscopically the growth appeared to be immense hyperplasia of the neuroglia and fibrous parts of the pia. The left nerve, much enlarged, presented early stages of the same growth.

SOCIETY PROCEEDINGS.

THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.

Held at Paris, August 2-9, 1900.

(Continued from page 234.)

Section on Internal Medicine.

First Day—August 3d.

Gastric Diseases.—Professor Dieulafoy of Paris opened the discussion by a report on "The Origin of Gastric Ulcer." He considers that acute ulcer of the stomach is nearly always infectious in origin. He has seen a series of cases in recent years in which, during the course of pneumonia, hematemesis has occurred. On several occasions death has ensued and the autopsy showed that the mucous membrane of the stomach was deeply eroded. In nearly every case the pneumococcus was demonstrated almost in pure culture. At times these micro-organisms were found in large masses. Very seldom had the ulcerative process attacked the muscular coat of the stomach. The ulcers were evidently acute and but of few days' standing; the weakening effect of the loss of blood caused death to ensue from the pneumonia. A small artery was usually found to be eroded. The hematemesis usually occurred on the third to the fifth day of the pneumonia.

Gastric Ulcer from Toxemia.—Professor Dieulafoy has also seen gastric ulcer result from an intense toxemia. On the second or third day, for instance, of an appendicitis the patient becomes yellow, evidently from toxic icterus; the urine contains albumin and urobilin in considerable quantities and black vomit, evidently of altered blood, occurs. In such cases, when fatal, an ulcer of the stomach is also found. It is evident that the presence of the toxins in the circulation causes the stomach to attempt their elimination as occurs with so many poisons. This elimination serves to lower the vitality of the mucous membrane and then the ulcers occur. It has always been said that the gastric juice caused the ulcers by digesting the mucous membranes. There is some predisposing cause needed, however, and it seems to be in many cases either septic or toxic or infectio-toxic. The ulcers that occur during the generalization of the pneumococcus in the system, the so-called pneumococcic, evidently correspond to those that occur during the toxemias. In most cases of ulcer of the stomach it is probable that either some septic condition or an intoxication has preceded the actual ulcer.

Post-Ulcerative Cicatricial Stenosis.—Professor Ewald of Berlin discussed the treatment of these cicatricial contractions of the stomach after ulcer. They often give a great deal of discomfort and the only satisfactory treatment in obstinately severe cases is recourse to surgery. In a recent case a young woman came with all the typical symptoms of gastric ulcer. Her condition was so bad that she was at once put on the ultimate treatment for gastric ulcer. Her stomach was given absolute rest. Nothing was given by the mouth and she was nourished *per rectum* and subcutaneously. In two weeks all her symptoms disappeared and she was able to take milk and then other nourishment. She seemed perfectly cured. After three months, however, gastric symptoms recurred although without hematemesis. There was evidently a question of cicatricial contraction. A gastroenterostomy was done and all the symptoms were relieved. The patient has remained well ever since. As soon as it has been demonstrated that such cases are obstinate to medical treatment (as they are inevitably progressive), surgical intervention should be recommended.

Diagnosis of Cicatricial Contraction.—For this Professor Ewald has found that if the stomach is distended with air and then filled with water, especially if the stomach-tube be used for this

purpose, the air will remain beyond the contraction, and when an electric lamp is introduced into the stomach there is a characteristic difference between the light shining through the air and the water.

Pneumococcus Ulcers of the Stomach.—Sansoni of Turin reported several cases in which gastric ulcers complicated pneumonia and others in which at autopsy pneumococci were found in the stomach lesions. Where pneumococcus ulcers occur they are especially liable to be complicated by hematemesis. When they occur as a complication of pneumonia the prognosis is apt to be fatal.

Surgery of Gastric Ulcers.—Professor Doyen of Paris said that in presumably non-cancerous affections of the stomach which are obstinate to medical treatment at least an exploratory incision is indicated. Sometimes a cancer in an operable stage will be found and can be removed with an excellent prognosis. For ulcer of the stomach surgical intervention is a most favorable procedure. It is not necessary to touch the ulcer itself, but only to do a gastroenterostomy. The ulcer heals completely and gives no more trouble. Professor Doyen has operated now in not less than 140 cases with most satisfactory results. A posterior gastroenterostomy is done and is very seldom fatal. It is time for medical men now to realize that the introduction of surgery into the field of stomach diseases, far from being an uncalled for encroachment on their special field, is a great benefit to patients for whom medicine can do absolutely nothing. Most doctors of long experience have had the sad duty of having to stand idly by while young patients bled to death from an uncontrollable hemorrhage from a gastric ulcer. In the present state of surgery to permit such an occurrence is almost criminal.

Lab Ferment Tests.—Meunier suggested that after the neutralization of the acid of the gastric juice the lab or milk curdling ferment can be calculated quantitatively. The amount of lab ferment seems to bear a direct ratio to the amount of pepsin present, and when the pepsin is increased or diminished the lab ferment seems to share its variations. The prognosis of the absence of lab ferment seems to be the same as for the absence of pepsin.

Neurotic Vomiting.—Bendersby described a series of cases in which persistent vomiting was due, not as was originally suspected in most of the cases to organic disease of the stomach, but to nervous conditions. These nervous gastric symptoms are much more common than has been supposed. Almost any organic lesion of the cord or brain may cause them, and vomiting is a pregnant sign of nervous trouble. More important for the general practitioner, however, are the cases of purely neurotic vomiting that occur. For these lavage has often been tried, but it seldom gives satisfaction and often seems rather to do harm than good. The reflex nervous excitability of the stomach is increased by the irritation of the stomach-tube and the water that is introduced. The best treatment for mild cases is an absolute milk diet for several days with gradual additions. If this is not well borne, absolute rest should be given to the stomach for some time and rectal feeding substituted.

Essential Gastric Crises.—Dr. Tarrulla of Barcelona reported some cases of stomach symptoms resembling those that occur in the gastric crises of tabes yet where tabes was surely not present. In certain tabetic cases the crises occur very long, often even years, before the other signs of tabes become manifest. In Dr. Tarrulla's cases sufficient time had elapsed to exclude tabes and he assumes that the crises are part of a general neurosis or sometimes are due to a degeneration of the ganglia in the walls of the stomach. In any case the treatment should be directed to the nervous system rather than to the stomach. In all cases, of course, careful examinations of the gastric contents should be made so as to exclude disease of the stomach itself.

The Fats as Food.—Dr. Hermann Strauss of Berlin said that in many cases of hyperacidity of the stomach the use of the milk fats, butter and cream and milk itself, gave relief of symptoms and were nearly always well borne by the stomach. In about 5 per cent. of the cases the patients had an idiosyncrasy for milk and could not take it. In cases of gastric ulcer with hyperacidity the milk fats prove especially satisfactory. It is in these cases particularly, that the carbohydrates are poorly borne. The sugars and starches increase the gastric acidity and add to the discomfort already felt. The milk fats should be given in quantities from 100 to 250 grains per day and an examination of the stools will show that a good part of this amount is digested, absorbed and consumed by the organism.

Olive Oil for Gastric Cases.—Dr. Cohnheim of Berlin detailed his experience with large doses of olive oil in cases of severe gastric distress. In his first case the young man had suffered from an injury in the gastric region and it seemed probable that a traumatic ulcer had resulted. The pain on eating was so great as to make the patient avoid food. A wine-glass of olive oil taken before meals gave complete relief. The same remedy was then tried in other cases in which stomach discomfort was a prominent symptom. Even in cases of gastric cancer relief was afforded to many symptoms. In cases of pylorus stenosis most satisfactory results were secured as far as the alleviation of symptoms was concerned. Besides the dilatation of the stomach that existed began to diminish and in some cases eventually disappeared completely. These were evidently cases of functional or spastic pylorus stenosis and the result was most satisfactory. In some of the cases lavage had been tried for a long time without benefit and in one or two cases with increase of the symptoms. Cohnheim has treated 12 cases of gastric catarrh by this method with uniformly good results whenever the patients bore the oil well. A certain number of patients, about 1 in 20, cannot take the oil in the doses

required, that is, up to about 250 to 300 grams per day. In one or two cases this method of treatment was tried as an absolutely last resort before operation and it proved successful. Patients who had lost so much in weight as to appear almost cachectic began immediately to gain in weight and within a couple of months gained from fifteen to thirty pounds.

Olive Oil as a Family Remedy.—Professor Mathieu of Paris said that in certain of the country parts of Germany olive oil is used as a family remedy for all stomach pains. It is most effective and has a high reputation. In certain parts of France the same thing is true. It is often surprising to what an extent pathological changes have often taken place in the stomachs of these country people before they complain. The olive oil seems to relieve all discomfort. In his practice at the Hôpital Andral Dr. Mathieu has often used this remedy and knows how efficient it is where less simple remedies have failed. He recommends it with confidence despite its utter empiricism and lack of claim to any scientific basis.

Idiopathic Esophagus Dilatations.—Dr. Einhorn of New York discussed the causes, diagnosis and treatment of pouches of the esophagus. Most people claim that the esophageal dilatation has its origin in the scar of an old wound. It is probable that congenitally there are in some individuals weak spots in the wall of the esophagus which yield under the repeated applications of pressure during the act of swallowing. The best diagnostic sign of the existence of a dilatation of the esophagus is the failure of the ordinary swallowing murmur when auscultation is practised over the course of the esophagus low down. Where doubt exists the patient may be asked to swallow coffee or some colored liquid and use pressure to force it into the stomach, then water may be swallowed without pressure. The two different colored liquids may be brought up by the stomach-tube after a little manipulation. Usually patients who come have no idea that the material they swallow fails to reach the stomach. They usually complain only of a sense of pressure in the thorax.

Treatment of Dilatation.—Many suggestions have been made as to treatment. On theoretic grounds it has been thought that for a good while patients suffering thus should be fed through a tube so as to allow the esophagus absolute rest. There are no cures reported. The best treatment seems to be to wash out the esophageal pouch every evening and so prevent the continued presence of irritating material in the esophagus. Under this treatment patients often gain in weight twenty to thirty pounds and regain all their old strength.

Gastroenterostomy and Its Results.—Dr. Bourget of Lausanne presented the statistics of 146 gastroenterostomies done at the Lausanne Hospital for various indications. About one-half of the operations were done for functional disorders of the stomach. The total mortality was less than 10 per cent. and the results of the operations, especially in non-malignant cases, were very gratifying. The mortality of gastroenterostomy has been so much reduced that in all cases of severe gastric discomfort that prove obstinate to medical treatment at least an exploratory laparotomy should be done. If the gastric condition proves to be pylorus stenosis or spasm, or cicatricial contraction, or a recent ulcer, then a gastroenterostomy will relieve all the symptoms.

Muco-Membranous Enteritis.—Dr. Ismar Boas of Berlin made a special report on this subject. He considers that the disease usually has some pathological condition of the intestine for its basis that it is a true enteritis or colitis. It usually occurs in nervous individuals and a nervous element often enters into its etiology, but this is not the important feature of the disease. There are certain extremely painful attacks which come on suddenly in the midst of apparent good health which remind the observer very much of nervous crises due to organic disease of the spinal cord or brain. These cases are, however, extremely rare. There are certain cases of muco-membranous colitis in which the nervous symptoms fail entirely. Often the symptoms that are present are most indefinite. Sometimes patients know that they pass membranes in their stools; often, however, they are completely unaware of the fact. In such cases they are often surprised to see the pieces of membrane that come away after a simple rectal injection.

General Nutrition.—Patients suffering from this disease are often in excellent general health. They are frequently able to eat the most indigestible food without the slightest discomfort. Very often there is a history of having suffered from constipation for a long time. Usually most persistent attempts have been made to relieve this constipation and many different laxatives have been tried. Undoubtedly the present fashion of taking manifold laxatives is largely responsible for the increased number of cases of muco-membranous colitis that are reported every year.

Confusion of Terms.—Dr. Mannaberg of Vienna said that under the term muco-membranous colic or colitis it is evident that very different diseases are grouped by different observers. At one bathing-place in France one physician has seen 456 cases of the disease within a few years. Dr. Litten of Berlin saw 40 cases in one year's hospital experience. Dr. Einhorn saw 24 cases in about the same time in New York. About 5 per cent. of the patients of Professor Potain's private practice suffer from the disease. In Vienna, on the other hand, in Professor Nothnagel's clinic, where a special study of intestinal diseases has been made for twelve years and where such interesting cases would surely not be missed, only about a dozen cases have been seen in as many years. It is probably true, as Professor Potain claims, that the disease is more common among the well-to-do than in hospital practice. In Professor Nothnagel's private practice in Vienna the cases have been almost as rare as at the clinic at

the General Hospital. In Vienna they do not consider that a case deserves the name muco-membranous colic because mucus occurs in the stools and an occasional piece of coagulated material. The name is reserved for the more severe cases with the characteristic symptoms. Pain is especially an important diagnostic sign of the true muco-membranous colic. In a recent case a young man suffering from gonorrhea was taken with otitis media. He was of a nervous temperament and worried very much over both ailments. Suddenly he was taken with severe colicky pains in the abdomen which lasted for three or four hours and then he passed a characteristic membrano-mucous cylinder. The neurotic element in these cases is very evident when they are typical. It is probable, then, that too many cases not true membranous colic have been included under that name. In autopsies made a positive result was found, that is, some lesions of the large bowel were encountered. In two other characteristic cases of the disease, one of which was under Professor Osler's care in America, nothing was found in the intestine to account for the symptoms. The question of the nervous or inflammatory nature of the disease will have to remain unsettled until we have more autopsies. Unfortunately or rather fortunately patients very seldom die of the disease. While constipation is often associated with the condition, it must be remembered that this is not an invariable rule. Obstinate constipation may be followed by a paradoxic diarrhea. In general the disease remains one of the mysteries of modern medicine.

Section in Surgery.

First Day—August 3d.

The session opened with Professor Tillaux, the President of the Section, in the Chair. On the entrance of Professor von Bergmann of Berlin, a few minutes later, the Chair was given up to him. It was noticeable that at the morning session all papers were kept within their limits of ten minutes, but at the afternoon session, with a Frenchman in the chair, papers exceeded their time twenty, thirty and even forty minutes.

The principal discussion was on the surgery of the pancreas, and was participated in by Professor Ceccherelli (Parma), Mayo Robson (Leeds), Boeckel (Strasburg), and numerous others, some of whom have been put off till to-morrow's session.

Ceccherelli began with a review of the subject from which he deduced conclusions in relation to all questions concerned. His principal conclusions were: Any functional disturbance of the pancreas, as indicated by loss of flesh, presence of fat in the stools, sugar in the urine, bronzing of the skin, icterus, and pain in the pancreatic region, should cause the consideration of an operation. Surgery of the pancreas has not advanced *pari passu* with visceral surgery in general, on account of the difficulty of diagnosing pancreatic disease, especially in a stage early enough to give surgery a chance of success. Moreover, considerable difficulty is met with in complete extirpation on account of the anatomic conditions of the pancreas, its deep situation, its intimate connection with other important viscera, its rich supply of vessels and nerves, and the fact that its secretion plays such a part in the economy. For although it has been proven experimentally that extirpation is possible and compatible with life, it has not been proven clinically in spite of a few cases which have been recorded. Extirpation is never advisable in syphilitic or tubercular processes. Partial extirpation should be so done as to leave one of the two pancreatic ducts. The most frequent tumors are cysts, either hemorrhagic, following traumatism or apoplexy, or retention, or hydatid. In these cases intervention is justifiable and frequently necessary, but extirpation of the organ should not be attempted, the removal of the cyst being sufficient. When the operation is complete, the cavity of the cyst should be entirely closed, or, if this is impossible, its walls should be sutured to the abdominal wall in order to prevent exudation of pancreatic juice into the abdominal cavity. In the case of calculi the surgeon should not hesitate to remove them. Necrosis needs surgical intervention in order to remove the necrotic particles. In suppurative or gangrenous pancreatitis the rule is not to operate during the acute stage, but if later an abscess or gangrene develop intervention becomes necessary and three routes are open to the surgeon, namely, the lumbar region (extraperitoneally), the pleura, or the median line. In hernia of the pancreas following wounds, reduction and, if necessary, fixation should be done. If the hernia is diaphragmatic the route through the thorax is preferable. Some cases of movable pancreas have been observed and experimental pathology would seem to authorize fixation. If, due to any process, the opening of the canal into the intestine is occluded, a new opening should be made and, if this is not possible, a pancreatic fistula should be created. Sutures through the parenchyma of the pancreas are tolerated as in the kidneys, the liver, and the spleen. Union of wounds takes place by proliferation of the preexisting cells, and especially of the connective tissue; experimentally regeneration of the pancreas has been proven. Often complete extirpation of the pancreas, a marked development of the glands of Galeati occurs to such an extent as to replace the extirpated viscus. In extirpation ligatures, not the cautery, should be used to prevent hemorrhage.

Professor Mayo Robson of Leeds commenced his report by stating that he is convinced that pancreatic affections are much more common than is usually thought. He based his remarks on his personal experience, he having operated on 40 cases of pancreatic disease, and having seen a considerable larger number of cases in which operation was either not consented to or not thought advisable. Under anatomical considerations he dwells on the importance of pos-

terior drainage where practicable in acute and in suppurative pancreatitis. For reaching the main pancreatic duct, he has found it practicable to incise the second part of the duodenum and lay open the termination duct from the papilla.

Cancer of Pancreas.—Of which he has seen over fifty cases, the author has found usually to occur after 40, and he believes that the cases occurring earlier in life are in many instances chronic interstitial pancreatitis, which may resemble cancer not only in the symptoms, but in the naked eye appearance after death. After describing the symptoms, he remarked on the importance of distinguishing between cancer of the head and that of the body and tail of the pancreas; he then discussed the diagnosis and advised that especially in young subjects, but also at times in older patients, a hopeless prognosis should not hastily be given before surgical treatment has been tried, for if the case turns out to be chronic interstitial pancreatitis, a cure may result from treatment. In describing the treatment, the author thinks that excision of the pancreas for cancer can seldom be feasible or justifiable except in those cases where the disease is limited to the body or tail of the organ, and then only when it is caught in an early stage. Of the 15 cases on which he has operated for the relief of symptoms by cholecystotomy or cholecystenterostomy, 9 recovered and lived for some time in greater comfort. The important fact, however, that some of the cases operated on and thought at the time to be cancer of the head of the pancreas, but which recovered and are now in perfect health, showing the tumors to have been chronic interstitial pancreatitis and not cancer, leads the author to advocate operation in all cases not too far advanced, especially in young or middle-aged patients, not because much good will be done if the case be truly cancer, but under the hope that the tumor may be inflammatory and not malignant.

Pancreatic Cysts.—The author has operated on 5 cases of pancreatic cyst, for which as a routine treatment he advocates incision and drainage which he has performed in 4 cases with 3 recoveries. In one case the cyst was so easily enucleated that it was removed in that way, and the patient made an uninterrupted recovery, but his experience not only in his own cases, but in others seen under the care of his colleagues, would lead him to believe that excision can only rarely be justifiable. In none of his cases were any pathognomonic symptoms present, and the author thinks that the diagnosis must usually be made from the physical signs.

Acute Pancreatitis.—The author draws a parallel between the inflammatory diseases of the liver, such as infective and suppurative cholangitis and chronic interstitial hepatitis and similar diseases of the pancreas and its duct. He believes he has seen functional ailments of the pancreas ending in recovery that would come under the heading of infective catarrh of the pancreatic ducts, and he adduces positive evidence of suppurative catarrh of the ducts, as well as of chronic interstitial inflammation of the gland. He believes that as diagnosis becomes more perfected these diseases will be more frequently recognized and awarded their proper place in medicine. The author assents to the pathological classification proposed by Fitz, of dividing acute pancreatitis into suppurative hemorrhagic and gangrenous pancreatitis, but for clinical purposes he considers the subject under acute, subacute, and chronic pancreatitis. In discussing the etiology he lays stress on bacterial infection as being the essential and immediate cause, but enumerates a number of extrinsic causes such as gastroduodenal catarrh, injury, and pancreatic and biliary lithiasis. The mode of infection he believes is nearly always through the ducts. The author discusses the symptoms, signs, and diagnosis, and remarks that although pancreatitis is a disease without exact pathognomonic sign the diagnosis can usually be arrived at by a careful study of the history, mode of onset and the combination of symptoms and signs.

A case of acute infective pancreatitis coming under the author's observation is related, also four cases of the suppurative form which were operated on after abscess had formed; of two, in which the pus was evacuated by an incision in the loin, recovery followed, of two opened from the front, both died. In both cases leakage of pus had previously occurred into the stomach and had been vomited. In one case of suppurative pancreatitis in which rupture of the abscess occurred into the bowel, the patient was too ill when seen to bear operation, and gradual recovery occurred without surgical treatment. The treatment of acute infective and frequently that of suppurative pancreatitis practically resolves itself into that of peritonitis commencing in the superior abdominal region, and the author lays stress on the getting rid of inflammatory products by lumbar drainage if practicable, although it may be necessary to make the diagnosis by an anterior incision. In the acute form he draws a comparison between gangrenous appendicitis and acute infective pancreatitis and considers surgical treatment just as necessary in one as the other as soon as a probable diagnosis can be arrived at. If there be great distention in the epigastrium it will be easier and safer to make the exploratory incision in the left costovertebral angle. Treatment other than operative, in order to get rid of distention, relieve pain, fever and other symptoms until a definite diagnosis can be made, is also considered. The details of reaching the abscess when found are also discussed, whether the collection be lumbar, subdiaphragmatic, epigastric or pelvic.

Chronic Interstitial Pancreatitis.—Mayo Robson lays great stress on the importance of this disease, which he believes is often mistaken for cancer of the head of the pancreas and which he believes has not received much attention either from clinical observers or from pathologists, certainly not as much as it deserves. His experience in this class of cases has resulted from his

having operated on a considerable number of cases of jaundice depending on obstruction in the common duct, the obstructive jaundice, wasting, paroxysmal attacks of pain and ague-like seizures having given rise to the suspicion of gall-stones, and the absence of relief by medical treatment having rendered surgical treatment necessary. He argues that its recognition is of vital importance since it is a disease not only capable of relief, but of absolute cure by surgical treatment. The author illustrates his assertion by a brief report of 15 cases on which he has operated, with recovery in 14. In the fatal case, operated on when the patient was almost too ill for recovery, an autopsy showed a simple cirrhosis of the head of the pancreas. In another case in which relief was given by cholecystenterostomy, but in which there was a recurrence of the trouble owing to closure of the opening followed by death three months afterward, an autopsy showed chronic interstitial pancreatitis and not cancer as the course of events had led those observing the patient to suppose would be found. The author believes that chronic interstitial pancreatitis with inflammation in the pancreatic ducts is a regular accompaniment of gall-stones in the common duct, and that it frequently continues after the original cause has passed; this observation has been confirmed by Dr. Ferguson of Edinburgh, who says that his almost universal experience in cases where death has resulted from infective or suppurative cholangitis is that beads of pus can be expressed from Wirsung's duct. The cases related illustrate the symptoms and the treatment by cholecystotomy, which at once removes tension and allows the pancreatic duct to empty the organ of its infective products. Doubtless at times the manipulation of the head of the pancreas, which occurs during the operation, may detach calculi and inspissated mucus or pus from the pancreatic duct. The simulation of malignant disease of the head of the pancreas by chronic interstitial pancreatitis should lead the surgeon to hesitate in declining operation in any case of distended gall-bladder with jaundice where the patient is able to bear it, for, although little good will be done if the disease be malignant, should the disease prove to be inflammatory a real and permanent cure may be brought about. After some remarks on hemorrhagic pancreatitis, which in the author's experience of three cases has always been traumatic and associated with effusion into the lesser peritoneal sac, he discusses the subject of pancreatic calculi, which both from the paucity of specimens in the museums, from the very few examples found post-mortem, and from the few recorded cases, the author believes must be a rare disease, and usually only recognized by the pancreatitis and the obstruction to the common duct with infective cholangitis to which the calculi give rise. For their removal he recommends exploration of the duct through an opening in the second part of the duodenum of which operation he gives examples. In conclusion, the author looks forward to the time when pancreatic diseases will be awarded the place they deserve in the diagnostic efforts of the physician, and when the surgeon will be called on much more frequently to treat them at a stage when operation, whether exploratory or curative, may be undertaken with every hope of temporary success or permanent cure.

Boeckel of Strasburg said that operations on the pancreas are indicated in traumatisms, inflammations and their consequences (suppurative, gangrenous, and hemorrhagic pancreatitis, and pancreatic and fatty necrosis), and in solid and fluid tumors. In recent wounds the part of surgical intervention is limited since death usually takes place early. Out of ten such cases eight died. The only rational treatment consists in tamponing. The finding and ligature of the bleeding vessels in the great majority of such cases is impossible on account of the precariousness of the wound. In inflammations and tumors the surgery of the organ is not limited to the gland itself, but takes in also the neighboring viscera. These cases usually consist in a hemorrhage or purulent mass developed primarily in the pancreas, but breaking through and becoming encysted between parts of the neighboring peritoneum. The operation here is very simple, all that is usually required being an incision with enucleation of the mass. If the tumor is limited to the gland alone, especially if it is solid, interference is a much more delicate affair, on account of the deep situation of the gland, its vessels, and the fact that complete extirpation of the gland will lead to a rapidly fatal diabetes. These operations therefore are indicated only in localized tumors and inflammations. In those cases there are three ways of approaching the tumor, from the epigastric region when the tumor emerges above the lesser curvature; through the gastrocolic region, or through the mesocolon, when the tumor has grown between the folds. Exceptionally we may approach through the lumbar region and operate outside the peritoneum. The statistics of operations on pancreatic cases which used to be considered incurable are becoming every day more favorable; some of them are: Suppurative and gangrenous pancreatitis, 11 cures and 9 deaths out of 20 cases; hemorrhagic pancreatitis, 5 cures and 18 deaths out of 23 cases; solid tumors, 8 cures, of which 4 were lasting, and 3 deaths out of 11 cases; 144 cases of cysts arrange themselves as follows: Operation completed at one time, 99 cases, 92 cures, 7 deaths; operation done at two sittings, 16 cases, 16 cures; extirpation, total or partial, 25 cases, 21 cures, 4 deaths; 4 cases without detail gave 3 cures and 1 death.

Splenectomy for Malarial Splenomegaly.—Michailowsky of Sofia claimed to have done splenectomy 16 times, 15 times for malarial enlargement, and once for a post-traumatic, hemorrhagic cyst. Basing his conclusions on these cases and thirty or more done by Jonnesco he insisted on the benignity of the operation, its ex-

cellent results and the disappearance of the cachectic symptoms. One case was a woman in the fifth month of pregnancy with uncontrollable vomiting, edema of the legs (without albumin) cachexia, and pulmonary emphysema. The spleen when removed weighed 3000 grams. The patient recovered without accident. In the sixteen cases there was but one death, and that from pleuro-pneumonia.

Treatment of Hydatid Cysts of the Liver.—Jonnesco of Bucharest said there are four kinds of operations for hydatid cysts of the liver: (1) Puncture followed or not by parasiticidal injections; (2) marsupialization; (3) incision followed by evacuation and suture of the cyst; (4) enucleation and extirpation of the cyst. This last operation, which is the ideal one, is so rarely applicable that it can only be reckoned on in exceptional cases. Puncture has been abandoned as uncertain and even dangerous. Marsupialization is the operation of necessity, applicable only to purulent cysts and those which are calcified and so prevent retraction of the sac. The operation of choice consists in incision with evacuation of the fluid, daughter-cysts and germinative membrane, followed by suture without drainage or fixation of the cyst to the abdominal wall. The author did six cases, the cysts varying in size from that of a fist to 20-30 cm. in diameter, and all with success. The escape of bile into the cyst is not a contraindication, one case of this kind coming into his category. In one case where he operated a second time for a second cyst, he was able to see the result of the previous operation after two years. The pocket had completely disappeared and only a hard cicatrix remained.

REVIEWS.

Christian Science. An Exposition of Mrs. Eddy's Wonderful Discovery, Including its Legal Aspects. A Plea for Children and Other Helpless Sick. By William A. Purrington. E. B. Treat & Company. New York.

The wonderful guilelessness and gullibility of the self-conceited has been the standard prey of the quack and the charlatan ever since there have been "pathies" and "isms." The feeling of being a little better than one's neighbors is not a Biblical tradition but an every-day fact, and the clever man or woman, who by instituting a cult which can engender in its followers this delicate sense of superiority, is sure of a living, and generally a fat one, in this as well as other days and generations.

Some of the ins and outs of the methods pursued in this later day "get health quick" method are well portrayed in this small volume of Mr. Purrington's. We commend it to the uninitiated as well as to the enlightened. That it will fall as water from a duck's back on the fatuous followers we have not the slightest doubt, since, from the times of the cuneiform inscriptions to the present, history teaches the fact that social delusions are the hardest things to cure.

The author has taken up some of the legal points of view of Christian Science and has shown what the courts have been able to do in their attempts to avert disaster to those who are really sick and in need of intelligent supervision. From many points of view the design of the work is very commendable, but when one has the "will to believe" it is next to impossible to show the foolishness of their course; and it sometimes seems to be wiser to allow a foolish set of ideas to develop to their most extravagant proportions, when by self-limitation they die. It sometimes is hard on the innocent, for whom this book was written, but the wages of sin is death and what is the superstitious ignorance of most isms and pathies but sin!

Healthy Exercise. By Robert H. Greene, M.D. Illustrated. New York and London, Harper and Bros., 1900.

This little volume of 160 pages is a pleasantly-written practical book on the subject of which it treats. Part I. is devoted to the theory of exercise, baths and bathing; Part II. to the choice of an exercise; Part III. to exercises themselves. Athletics among young people at the present time are being carried to an unfortunate extreme. The theory of the book under discussion is that light exercises, such as can be conducted at home, when systematically and regularly prosecuted, develop a healthy muscular tone, give elasticity and proper carriage to the body, and preserve a normal and wholesome degree of health. It is a good guide in such matters.

A Handbook for Nurses. By J. K. Watson, M.D. (Edin.) American Edition under the Supervision of A. A. Stevens, A.M., M.D. Philadelphia: W. B. Saunders, 1900.

This is a very attractive book and has one important element of superiority over many of its kind which one sees in use in our hospital training schools, namely, that of having been prepared not by a graduate nurse with two or three years' work behind her, but by a physician. A convenient detail facilitating reference and study is the comprehensive and clear marginal indices which carry one from paragraph to paragraph with refreshing definiteness. On the other hand, the general index is rather brief, almost meager and certainly too barren of the cross-references and synonym-indexing which a student book should possess. Under most of the operations the chief instruments needed are mentioned, giving the nurse a good notion of what she must do if required to prepare the instruments for any operation. There is also a most excellent chapter on cases of emergency, to learn which would improve our nurses greatly. Taken as a whole the book is a "revised version" of the subject, a distinct advance beyond its kind.

THE MEDICAL NEWS.

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THE CONSTRUCTION AND MANAGEMENT OF SMALL COTTAGE SANATORIA FOR CONSUMPTIVES.[1]

BY ARNOLD C. KLEBS, M.D.,

OF CHICAGO.

IT is not the purpose of this paper to discuss the value of sanatorium treatment for consumptives. The members of this Association are thoroughly familiar with the subject, and although there might be still a difference of opinion as to the extent of success which can be attained in different cases, no one familiar with the subject doubts the importance of the movement in this direction. Experience certainly has demonstrated the advantage of the systematic sanatorium treatment over the "open treatment" at home or in health resorts. It has further shown to a very great extent that equally good and even better results can be obtained at home in sanatoria than in far-away regions with more desirable climatic conditions, and it seems that the good results obtained in home climates outrange in duration those of foreign regions.

It will never be possible to accommodate all consumptives in hospitals or sanatoria, nor even an adequate number of those recognized as such by medical men. Therefore, it will be one of the chief purposes of sanatorium treatment, not only to attract numerous patients under one roof, but also, and still more, to scatter institutions in the greatest possible number all over the country. Every one agrees on the great educational influence which the sanatorium régime has on the individual, who later becomes a missionary in the cause of hygiene, by example and by teaching, spreading broadcast the principles to which he owes his recovery or at least decided improvement. There certainly is no better and more impressive teacher than experience.

The fight against this disease, which is of such distinct danger to the economy of the State, is now carried on in different communities of this country; but there is need, it seems to me, of more concerted action of a National character, and with an underlying, carefully studied plan, which would bring about more lasting results. A small country, like Norway, has been able by such a plan to keep in check leprosy, which in many respects resembles tuberculosis. The public but little understands the extent of this danger; a great deal is done now to educate public opinion on this point, and it is to be expected that more progress in this direction will be made when professional men in general take the leadership and desert their somewhat apathetic and indifferent position. In recent years societies have been formed for the prevention of tuberculosis, the Pennsylvania Society in the lead. Splendid work has been done to educate public opinion and to influence legislatures. To their work it is largely due that the construction of State sanatoria for the poor has been brought into consideration. But their influence is more or less a local one, although the example once set stimulates imitation to a great degree. The chief aim of these local bodies is officially to spread correct information on the prevention of the disease, by distributing pamphlets and directions to the public, by organizing public lectures, etc.; but unless their endeavor is backed by a strong, influential and central organization, they can do comparatively little. So, for instance, a "Society for the Prevention of Tuberculosis" was founded in Chicago, and soon after its organization and over its head a "Citizens' Committee" was formed, which collected money for a consumptives' hospital and, if I am well informed, with good success. Probably much money will be spent for this hospital, but I believe that the plan to build it arises more from the desire to hospitalize consumptives, who are not accepted in other hospitals, than to go a step forward and carry on a systematic plan for treatment. We have another hospital for consumptives near Chicago in Dunning, built by Cook County two years ago and managed together with the insane asylum. This institution, for some reason or other, is dreaded by every one who expects to be sent there. It is considered worse than an insane asylum or any other general hospital, and any one sent there gives up hope of ever returning. Such institutions tend very much to discredit the efforts of the sanatorium movement, and although it is certain that their erection was undertaken with the highest motives, their value could have been considerably enhanced if in their construction a distinct plan, approved by an influential National body, could have been followed.

I am well aware that in the construction and management of such hospitals or sanatoria, local conditions must be taken into account, but the experience of past years in this direction has established general principles, which, with slight modifications, can be carried out anywhere.

Since Brehmer in 1854 started his sanatorium in Gerbersdorf, numerous institutions on a similar plan have been constructed everywhere, but chiefly in Germany. In England hospitalization of consumptives dates even further back, but only recently have institutions been built there with a plan different from general hospitals and paying

[1] Read before the American Climatological Association, Washington, May 1–3, 1900.

special attention to those features which materially increase their value. In this country, although we possess a few model institutions, the Adirondacks Cottage Sanatorium, under Dr. Trudeau's supervision, Dr. Bowditch's Sharon Sanatorium, the Loonis Sanatorium in New York State and another one in Aiken, S. C., these constitute about the only institutions where a distinct plan is followed both in construction and management. A new era has opened in this country with the building of the Massachusetts State Hospital for Consumptives in Rutland in October, 1898; and the first annual report by Dr. Bowditch demonstrates the beginning as a most successful and promising one. Other States are planning similar institutions and it is to be hoped that the experience so far gained will be most effectively utilized in the future.

The chief advantages which a hospital or sanatorium have to offer to a tuberculous patient are: The *greatest possible amount of fresh, pure and mostly open air; wholesome and abundant alimentation; protection from reinfection; cheerful surroundings and energetic guidance in regard to the daily régime, adapted to the individual case.* With intention I omit the carrying out of *other therapeutic methods or medicinal treatment,* because, although they may form the basis of important results and therefore should be further investigated, *they must take a secondary position in the treatment of pulmonary tuberculosis.* These advantages are to be found in those model institutions in this country, of which I spoke before, and I desire to add one point which I believe has not received much attention and still is of some importance. Sanatorium life, which under any circumstances has to be a prolonged one, becomes more or less monotonous to the patient, according to his or her individual disposition. We frequently see that this has a distinct bearing on the progress of some cases, and it seems of great importance to provide an adequate ocupation which will not be harmful in a given case. Games of various sort, entertainments, lectures and so on, have for this reason been introduced into the sanatorium plan and most assuredly this always should be done; but I do not see why other occupations, useful to the patient after his discharge, should not be introduced as a prominent feature in the plan. Gardening, carpentering and other occupations of a similar nature, a regular manual training-school, could easily be introduced and should receive attention in the planning of a sanatorium. In those institutions whose purpose it is to receive the more advanced cases, and for which the name of "hospital" seems more adequate, in distinction from "sanatorium" for those in earlier stages or with greater chances of improvement, such provisions are necessarily impossible.

Of all the few points which I mentioned as essential desiderata for the sanatorium plan, not one has an absolute preponderance over the other. We have to find them united in order to succeed. But the one point which in the constructive plan of the sanatorium, as well as in the régime of the patients, should receive the most careful consideration is the necessity of an *abundant pure-air supply.* In every good hospital as well as in dwelling-houses this point receives attention, but in planning a sanatorium it must be given the benefit of the most painstaking study and carefully weighed experience. The geographical location will have to be considered, and here we encounter again the discussion on the merits of home climates as compared to foreign ones. The sending away of consumptive patients to more or less remote districts would be of small value to the community. It would not be practicable to so transport but a very insignificant fraction of them. The distinct advantage of certain climates, especially those of high altitudes and southern latitudes, over others nearer to the chief centers of population has often been claimed but never been demonstrated conclusively. Fortunately experience in sanatoria in districts less favored by climate and even with distinct disadvantages has proven the fallacy of the dogma that: "Only in the removal to certain climates the consumptive may find his salvation." Nobody even now doubts the great advantages of a life in certain regions. The dryness, and especially the purity of the atmosphere, the absence of certain temperature changes, the advantages of surroundings which naturally lead to an out-door life, and many other points, speak for it. The chief disadvantage lies in the remoteness of such districts, inadequate accommodations, lack of supervision and usual absence of preventative precautions in lodging-houses, together with a crowding together of pulmonary invalids. The demonstration that equally or nearly as good results are possible from treatment near home must therefore be received as a great blessing. The contamination of the air in cities has hardly any influence on the districts thirty to forty miles distant. Provided the soil is well drained, there is an abundance of fresh, pure water, some hills or a forest to offer shelter against the northerly or easterly winds, and an absence of unhygienic and irreparable features, we can find a site for a sanatorium which would have all the advantages of easy access. Some locations near cities will offer still greater natural advantages. These are only the ones of greatest importance, and in the selection of a site one would naturally choose the situation which unites in itself the greatest number of natural advantages. The great natural purifiers of the atmosphere are sunshine, rain and wind. The last two we find in abundance in our more populous districts; the former, which has the most distinct influence on the healthfulness of a region (Ruhemann), is not so abundant, especially in winter. Some of the high altitude resorts have three or four times more sunny hours per day than do those of low altitude, but it would be incorrect to attribute to them for this reason alone an equally higher salubrity. The difference is certainly less, especially when by building our sanatorium on low lands, by well-

Fig. 1.

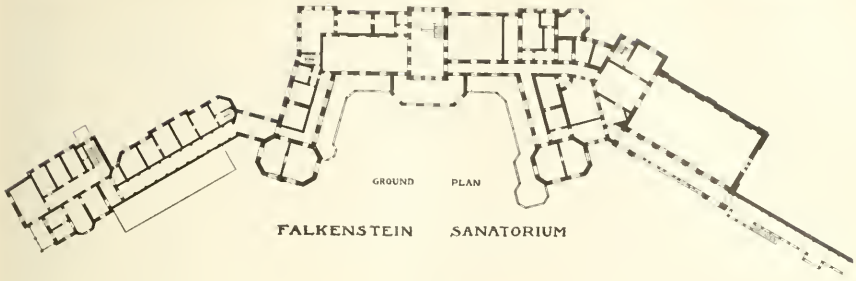


Fig. 2.

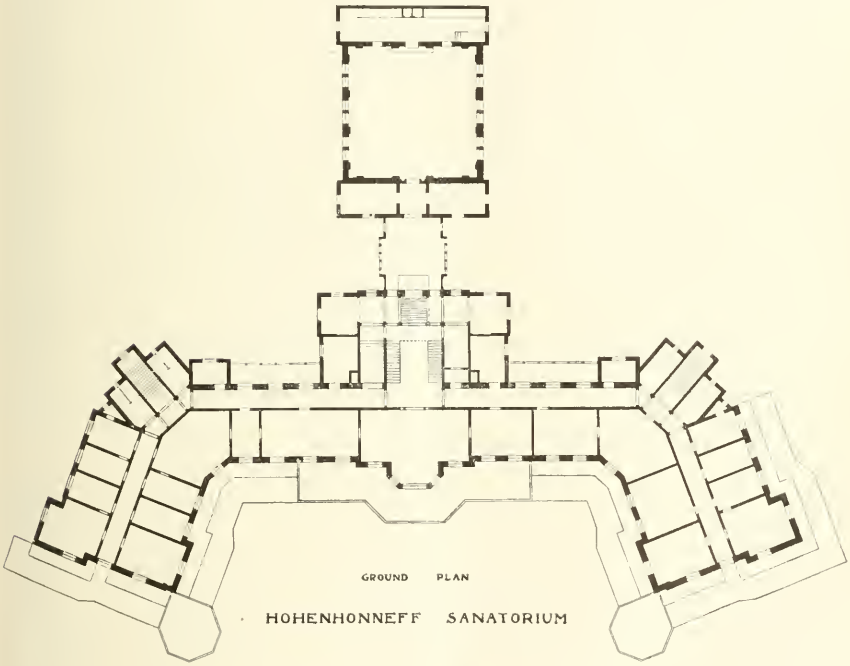
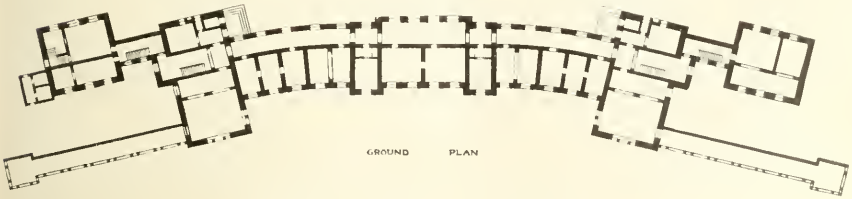


Fig. 3



arranged shelters and sun-galleries, we succeed in getting the utmost good out of local meteorological conditions. The *supply of good, wholesome food* which, together with open air, forms an essential of the sanatorium treatment, can be had much easier, better and cheaper near populated districts than in distant regions. It is a frequent occurrence that patients sent to Colorado, Arizona, California, etc., find in addition to very poor accommodations, food thoroughly unfit for the sick and often inadequate for the well. This is a serious drawback to such places, as a combination of favorable circumstances in the selection of a resort for consumptives is most necessary. The excellent markets which our cities offer are open to such sanatoria in their neighborhood, and allow not only a selection of the best quality, but also a variety of diet, most desirable and important.

The method by which in the construction of modern sanatoria the unfavorable influence of local changes in weather on the patients can be successfully avoided has received attention only comparatively recently. Falkenstein in the Taunus, built in 1876, is the first institution which was constructed on a plan, hence adopted by other sanatoria with more or less important modifications. Dettweiler, the originator of the "Liegekur" in the open air, was responsible for this first attempt, which since has proved so eminently successful. Falkenstein is the type for one of the two extreme groups in sanatorium construction, the single-building plan, the other being the cottage plan.

Here we find a large building accommodating 200 patients, with a southeastern frontage, protected toward the north and west by hills and forests. From the central part of the building two wings issue at obtuse angles, forming in this way a large space well protected from northerly winds. Here we find the porches and verandas for the rest treatment which is carried out in the open both in winter and summer. In later years, to increase the size of the institution, two cottages were built and joined with the main building by covered corridors. The same plan in general we find adopted at the Hohenhonnef Sanatarium, except for the absence of the cottages connected with the main building and the more open angle at which the wings diverge from the central part. In the Ruppertshain Sanatorium, which is situated near Falkenstein and under the same management, we find a somewhat different plan, different chiefly in the distribution of the verandas, and, as I believe, creating an improvement over the other plan. The whole building is slightly curved, with its concavity facing south. All the rooms and wards are on this side, and the fresh-air galleries are not enclosed by the main building, but extend east and west, following the direction of the curve of the building. A similar building plan has recently been adopted by the Sanatorium Freidrichsheim in Marzell (Kandertha1, Wurtemberg), near Badenweiler

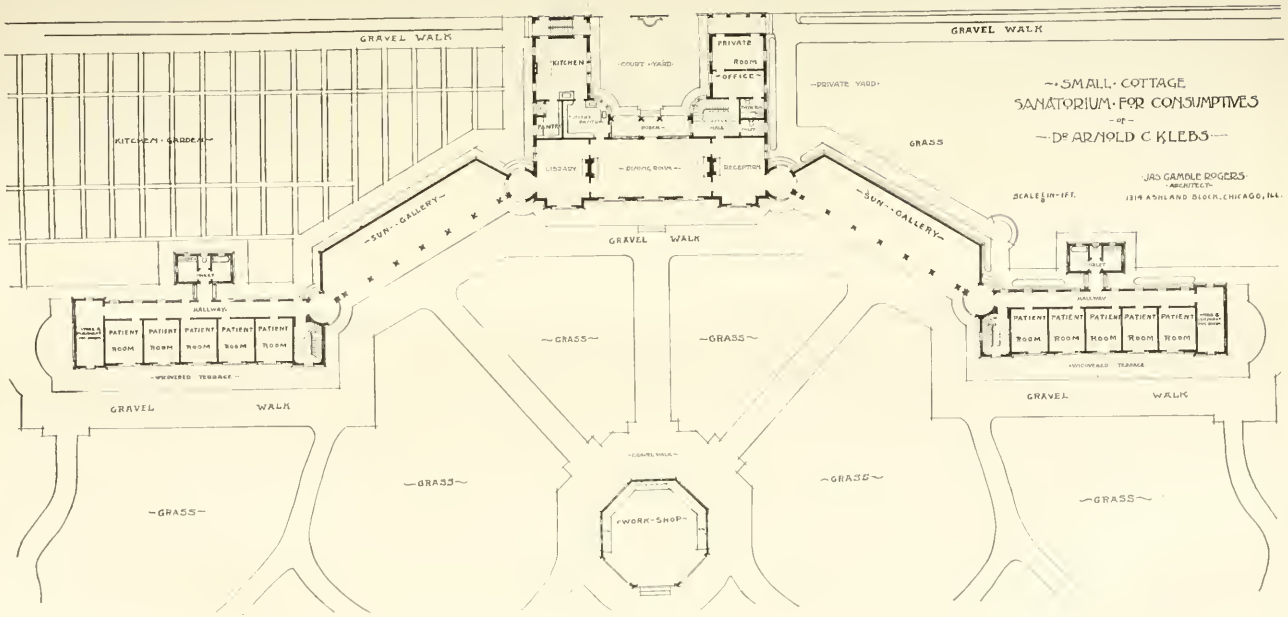
In the cottage plan, the porches of the single cottages constitute the fresh-air galleries, the common rooms, such as the dining-hall and administration rooms, being in a separate building. The little village is usually built so as to be protected from winds by a hill or by woods. The air space of the cottage rooms is increased by large transoms opening into a central sitting-room. This building type is so well represented in this country, especially by the Adirondack Cottage Sanitarium, that I need not go into further details in describing it.

A compromise between these two constructive types was attempted in the Massachusetts State Hospital for Consumptives in Rutland. The trustees, with the purpose in mind to furnish the wards with an abundance of light and the possibility of natural ventilation, and in order to avoid the ventilation from one story into the next one, common in high buildings, adopted a one-story plan of nine separate pavilions, joined on their northern end by short, covered corridors. The pavilions are not arranged parallel to each other, but are radiating in different directions from southeast to southwest. There are no covered porches, except at the southern end of the pavilions, where solaria, partly open, partly enclosed by glass, are joined directly to the wards.

Shelter, together with abundant ventilation, both in the rooms and outside, is the guiding feature in all these building plans, although the purpose is achieved in different ways. All have one point in common, they can accommodate a large number of patients, from 100 to 200 and more. The single-building plan allows the accommodation of a greater number of patients on a relatively small ground space and simplifies the supervision of the patients, as well as the administration. In the cottage plan a strict supervision cannot be carried out and a larger area is required for the building ground.

As rest in the open air so largely enters the régime of almost every patient for at least part of the day, the question of providing sufficiently sheltered places needs the greatest attention, and furthermore, such shelters, especially in our climate of two distinct seasons, have to be adjustable to the weather during winter as well as summer. In visiting the different sanatoria I was struck by the fact that but little attention was paid to this point. The fresh-air galleries, although in winter fully meriting this term, become hot-beds in summer, no refreshing breeze being apt to reach them. Of course in most of these sanatoria other, more open galleries are built in different locations on the grounds for use in summer; but where economy of space is essential, as in institutions for the poor, adequate arrangements should be included in the building plan. While superintending a sanatorium, I have often studied over the problem as to how to meet this important requirement, and owing to the able assistance of J. Gamble Rogers, Esq., architect, of Chicago, have been able to present you the plans for such an institution which, I believe, unites the

FIG. 4.



The Ground Plan.

advantages of the institutions mentioned with others apparently lacking there. In laying out the plan for such a sanatorium, I have limited its capacity to 25 patients; although in adhering to the same principle of construction a larger capacity can easily be obtained. In limiting the capacity to this number I was guided by experience, which taught me that it is almost an impossibility for *one* man to manage a much greater number of patients, and for the ultimate success of an institution of this kind it seems of the greatest importance that the management be carried out in uniform manner. I felt most gratified to hear Professor Bouchard most emphatically sustain me in this point. If Dettweiler was and, as I hope, still is able to personally know and supervise nearly 200 patients, this does not speak against my proposition; it only proves the marvelous ability of this master in the treatment of tuberculosis. The ability and personality of the man called to direct a sanatorium will to a very great extent determine its success, but there are limits to his capacity and to overstep them usually to bring about serious consequences. The question as to whether a large or small sanatorium is preferable will often be determined by the expense, and here it is of course evident that the per capita cost will be materially reduced in a large institution. Still, we have to bear in mind what we want to accomplish, and this is not the housing of the greatest possible number of consumptives, which for many reasons is limited, but rather the creation of centers for the practical hygienic education of patients for their own benefit as well as that of the community. The seed planted in different localities will finally spread over a wider space and bear fruit to more people than the large harvest earned at a single point. Wonderful success has been obtained as the result of the cottage-hospital movement in the United Kingdom, since its originator, Albert Napper of Cranleigh, in 1859 so ably pleaded its cause. For the accommodation and isolation of the hopelessly advanced we need large hospitals, but the ideal for the early cases is a smaller sanatorium. In the construction of such sanatoria much can be done to lower the per capita expense. In my plan I have given special attention to lowering the initial cost, and as I shall try to demonstrate, I also believe that the running of such an establishment can be done at a comparatively small expense without necessarily interfering with the thorough execution of its purpose.

My plan embraces three cottages joined by two galleries. The main building contains two offices, bed-rooms of superintendent or head-nurse, and in the second floor five bed-rooms for patients who have to be kept in bed, with a balcony so arranged as to allow the beds to be wheeled out in the open air. The annex to this building, extending backward and to the north, has a cellar for storing coal, wood, etc., and heating rooms, laundry, kitchen, pantry and servant-rooms on the second floor. The galleries which join the cottages to the central building diverge from the

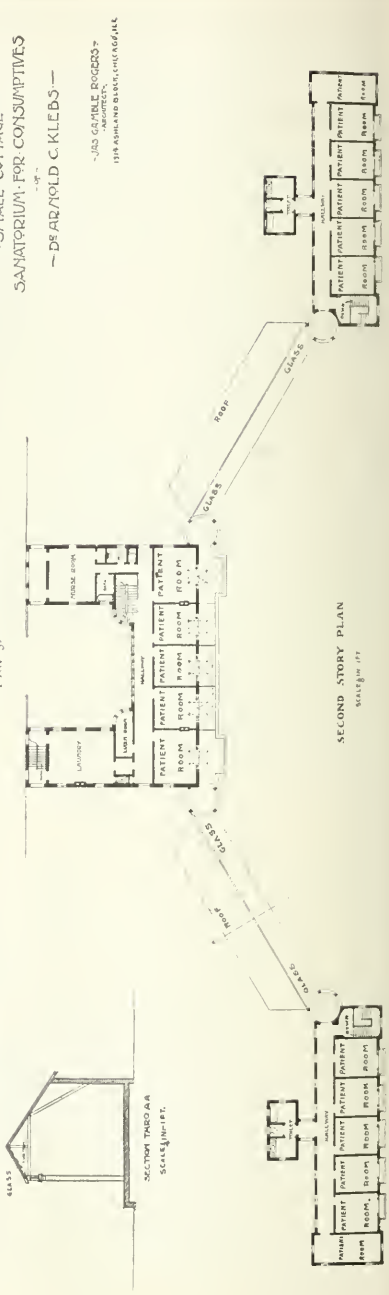


Fig. 5.

latter at an obtuse angle and are entirely open to the south, but enclosed toward the northern exposure. This enclosure can be removed entirely in summer, and in the months which are neither hot nor cold ample ventilation can be obtained by removing the lateral parts of the enclosure. The roof of the gallery is so arranged as to allow the sun-rays to reach its deepest part; still, if too hot, the extreme end of the roof is so constructed as to be easily lowered and so exclude the sun. This same arrangement serves also for protection of the gallery during rainy weather and, being made of glass, does not exclude the light, except when the shades are drawn. The gallery is sufficiently wide to offer a complete, thoroughly ventilated shelter in any weather, and is chiefly intended for the carrying out of the rest in the open air, and also serves as a covered way for communication with the two cottages, which contain in two stories twenty single rooms each for the accommodation of patients. In the arrangement of the rooms in these cottages I have adopted the plan which has given most satisfaction in other sanatoria. All rooms face south and open into a corridor behind them, which leads into the open and to the gallery. The porches and verandas in front of the bed-rooms I have intentionally avoided, although they form a special feature in many excellent sanatoria, as, for instance, the Ventnor Consumptive Hospital. Although I acknowledge their great advantage in hospitals for advanced cases, because they allow an easy access to the open air, in a sanatorium intended for those not too feeble to walk they only take away the sunlight from the rooms and are apt to affect the purity of the bed-room atmosphere. The bed-rooms here can be flushed by air thoroughly, without a draught on the bed. The door, which in summer is replaced by an open-work shutter and has a large open transom above, is on one side of the head of the bed and receives air from an opposite window on the corridor. The window extends to the floor, so as to allow a thorough flushing of the air space on the floor. Bath-rooms, water-closets and lavatories I have put in a small annex built out to the north of the cottage and separated by a little hallway. This arrangement makes them easily accessible from every room and still sufficiently isolated to prevent any possible sewer-gas or other contamination of the air.

The space thus enclosed by the three cottages and the galleries is perfectly sheltered from the most prevailing winds in winter and in summer, abundantly ventilated and cool in the shaded parts. Within this space I have placed a raised pavilion, which is to have only a roof and removable walls toward the north. This pavilion is intended for manual occupation of patients whose condition permits such. For the same purpose the grounds around it could also be utilized for gardening and other occupations useful and diverting to the patients.

It is often surprising to what extent rest in the open air in our winter climate can be carried out, provided the wind can be kept off by adequate shelters. I have been able to keep patients out-of-doors throughout the winter in Chicago, where this season is not renowned for mildness. With a few planks and screens I was able to construct a most serviceable fresh-air gallery on a porch, while blankets, furs and hot-water bottles, together with a steamer-chair, completed the outfit. I was somewhat astonished to read in the Transactions of this Association of last year, in the discussion of a paper read by Dr. Gardiner, that he was able to keep his patients out-of-doors in Colorado for five and a half hours daily on the average. I have been able to reach this average, counting the winter from November 1st to May 1st, in most cases, and even reached six and a half hours in some. I feel certain that with greater facilities at command this time can be increased even in our climate. I do not propose to discuss the value of these prolonged out-door recreations, but I must mention that as far as my experience goes I have found them of the greatest value, showing in gain of weight, reduction of temperature and general improvement not to be attained alone by the other measures applied at the same time, as cold and cool baths and abundant alimentation; and I have also the distinct impression that the same cannot be accomplished in well-ventilated rooms. Of course they are most important, but the life of a consumptive must be out-of-doors.

I hope you will not think me too radical and dogmatic in my advocation of the open-air plan, but during a period of some years spent with tuberculosis patients, I convinced myself of the enormous value of an open-air régime and the disadvantage and often detrimental effect of half measures. I have seen patients to whom the mere suggestion of going out-of-doors in winter or of cold water applied to their skin sent a visible shudder down their backs, later becoming most enthusiastic advocates of their régime. To carry out a plan of this kind in private practice among the poor meets with almost insurmountable difficulties. In a sanatorium where soon a stock of model patients is trained these measures can be carried out with comparative ease and to the greatest benefit to those most concerned.

In my plan I have figured on single rooms for each patient. That under given circumstances wards may be substituted hardly needs mention in the light of our present knowledge of how to avoid infection from patient to patient. They have been adopted in other institutions and the prejudice which was encountered in their planning soon yielded to the good results obtained in them afterward.

As to the interior finishing and furnishing, I have but little to add. Everything apt to catch dust must be avoided. Linoleum or some other washable material should be used on the floors. A good heating-plant is of great importance and a water-supply to each room or ward most desirable. These are points which in our days of sanitary engineering, architecture and plumbing

have become much appreciated and are applied in hospitals as well as residences. It would lead too far to enumerate all the details. It need only be said that simplicity and a cheerful appearance should be guiding features. The Rutland hospital is a model in this respect also.

One point which I had in mind in recommending a water-supply to every room or ward needs attention. I mean to facilitate hereby the carrying out of hydrotherapeutic appliances. Usually in sanatoria there is a separate douche-room, generally in the basement, where all patients go for their douche, sponge or whatever they are directed to take. I have always found this complicated and it does not induce the patient to carry it out after his or her discharge, while if we place in every room a round, flat, tin tub which, when out of use, can be put under the bed, and teach the patients how to take their sponge- or bucket-bath themselves, or have an attendant give it to them until they are able to do it themselves, we introduce a most valuable measure into their régime with comparatively simple means.

As to the management of such an institution, I should suggest to put the superintendence into the hands of one person of executive ability and proven knowledge of the requirements in such an institution, one who has sufficient authority over the patients to induce them to adhere strictly to the prescribed régime, and who at the same time is able to keep an eye on the kitchen. Such persons are rare, but they can be found, and I feel inclined to believe that such a position would better be filled by a specially-trained nurse than by a physician. Of course the sanatorium should have a staff of physicians, who decide on the general plan to be followed and who by regular visits satisfy themselves that everything is in good order and give detail directions. But one single head to such an institution I consider of very great importance and I am certain in time to come the larger institutions will train nurses for such purposes, who in every respect would merit the confidence of the medical staff as well as of the patients. Besides a clerical attendant and three nurses, together with the personnel of the kitchen, grounds, heating-plant, etc., no other attendance should be needed, as most of the other work could and should be done by the patients themselves.

Of course the plan has to be modified according to the pecuniary circumstances of the patients which the sanatorium proposes to receive. For the same reason the rates which each patient has to contribute to the expenses of the institution will vary.

This project, which I have the honor to submit to you, necessarily cannot be more than a sketch and I shall be glad if other important points are brought out in the discussion. My desire was to call attention to one of the many branches in phthisiotherapeutics—the construction of a sanatorium—which in general does not receive the interest it deserves. The medical man who is interested in the subject has to be a little of everything, besides mastering his own profession — physicist, architect, business-man, meteorologist, climatologist, and last, but not least, cook. And not as *"feu Cyrano de Bergerac; qui fut tout, et qui ne fut rien."*

The antituberculosis movement which is now sweeping over the civilized world, led by crowned heads and supported by distinguished men, has already accomplished much good by creating an interest in a subject which has been treated most indifferently. But a movement of this kind, in order to be of lasting benefit to humanity, has to have a more substantial basis than the mere education of the public through written or spoken advice. The appeal for the erection of sanatoria should not be put at the tail-end of the program, but should become the watchword of the movement. Tuberculosis will never be stamped out by indirect measures alone. Improvements in public hygiene, the spreading of the population of cities over larger areas, facilitated by rapid means of transportation, will accomplish the result if it ever can be accomplished. I fear that if we cannot base our efforts on the tangible foundation of results accomplished within reach everywhere, the movement so successfully begun will vanish like a castle in the air.

This Association, under whose auspices much excellent work has been done on the subject of tuberculosis, and which has as its members men who have been pioneers in sanatorium work in this country, would be the natural leaders in a National movement to accomplish definite ends.

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COOPERATION OF THE PUBLIC SCHOOLS IN TEACHING "GOOD TEETH, GOOD HEALTH."[1]

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"Whatever we wish to see introduced into the life of a nation must first be introduced into its schools."

In my office there is a motto, "Good Teeth, Good Health," suggestive of the central thought of this paper. In many cases it has made a deep impression upon the mind of the patient, whose eye has caught the inscription as he entered the room, and he has been prompted to read the lines attached to it:

Without good teeth there cannot be thorough *mastication*.

Without thorough mastication there cannot be perfect *digestion*.

[1] Read before the American Medical Association, Atlantic City N. J., June, 1900.

Without perfect digestion there cannot be proper *assimilation.*

Without proper assimilation there cannot be *nutrition.*

Without nutrition there cannot be *health.*

Without health what is *life?*

Hence the paramount importance of the teeth.

It is a noteworthy fact that a large proportion of my patients are boys and girls from six years of age upward, and young men from fifteen to twenty-four years of age. For the past twenty years I have been visiting-dentist to schools and public institutions in addition to caring for children in my office practice. The examination of many mouths has given me an opportunity such as few, if any, dentists have had of noting the condition of the teeth of young people, so that I ought to have a speaking acquaintance with my subject. It would be difficult, in my opinion, to find a like number of children in any public school (and I speak from a varied experience of nineteen years as a teacher) in as good physical condition as those who have received systematic care of the teeth. A few years ago I discovered that not one of the 500 children in one of the public institutions in my city had a toothbrush. The children of that institution are now supplied with toothbrushes, but I fear there are many similar institutions in the world where the toothbrush is never seen and the dentist never heard of.

There is a growing demand that the subject of hygiene should receive increasing attention in general education. Happily it requires less knowledge to keep what we already have than to recover it when lost. How to take care of the health or to avoid many causes of diseases may be learned. It has been estimated that half of the children born into the world die before reaching the age of sixteen. We can truthfully charge a large share of this great slaughter to ignorance or wilful neglect.

The efficiency of prevention is proverbial. Pain is undoubtedly one of the most dreaded accompaniments of physical ills. I am fully persuaded that more than fifty per cent. of dental caries is absolutely preventable by medicines internally administered which act specifically in the mouth; alike pleasing and imperative is the appeal to both ambition and intelligence to prevent, rather than to repair, the ravages of decay.

It is right, therefore, that the vast research respecting the hygiene of the mouth and control of dental disease, which has employed practitioners of dentistry for years in looking for the means of successfully preventing carious invasion of the teeth, should go for nothing in education; that this wealth of knowledge should be passed by as if it had no existence, and the young people of the country grow up as ignorant of it as if they had lived centuries ago? The problem which the science of dentistry is endeavoring to unfold, and the end which it aims to attain is to prevent the bacterial destruction of tooth-structure. If the teeth are not allowed to accumulate deposits on either their exposed or protected surfaces, they will, it is claimed, be exempt from caries. More broadly stated the proposition is: Given the varying predisposition of different individuals to caries, which is governed by the laws of heredity and environment, the growth of micro-organisms in the mouth is in proportion to the amount of disturbance they suffer, or rest and opportunity they enjoy. This is a recognized fact and almost axiomatic.

A large amount of suffering may be avoided through proper knowledge conscientiously applied. It would be a great saving of "Young America," and thereby of all America, if every board of health imitated the example of Ontario's board, which adopted the following resolution: "That dental inspectors be appointed by local boards of school trustees to periodically visit schools and examine children's teeth, and that a dental hospital be started in Toronto for the benefit of poor children; and these recommendations be urged upon the attention of the minister of education."

It will thus be seen that school boards have been urged to take the matter up. But treating diseased teeth of school children at public expense seems entirely out of the question at present; yet why should it be less reasonable to have visiting dentists than visiting music teachers, and drawing teachers, and teachers of physical culture? The position of visiting dentist in our public schools would not be a sinecure. There would be work to do every day. Just how far he should be armed with authority might be variously decided by different school boards. In general, it may be premised that his care and attention to any individual pupil should end where such pupil's physical condition ceased to be a threat or an offense to the health of his fellows. The State, however, at once can touch the subject by attending to the question of prevention. If bad teeth could be prevented the gain to the State and the individual would be of enormous value, as it is wonderful how many diseases can be traced indirectly to bad teeth.

It is the noble privilege of the teachers of the country (who are acknowledged as safe guides and who aspire to possess an amount of physiological knowledge such as every educated person ought to possess) to promote in some degree the preservation of the teeth of those under their care; and this they can do by inculcating early and earnestly and with the emphasis of a high religious duty the principles of dental hygiene. It is a subject in which all mankind has an interest, even though it be, as it too often is, an unconscious interest. The life of every man, woman and child ought to be guided and governed by its laws. This being so, the subject should be presented and agitated in many forms until its importance is appreciated. And not the least of the benefits which will follow the better diffusion of physiological and sanitary information will be the protection of the community from the impostures

of charlatans and also discrimination in the qualifications of competent dentists.

Side by side with medical science, dentistry has grown. Now the teeth are recognized as important objects of medical study as the eye or ear. The same spirit which has led to enlistmg the active cooperation of the public schools concerning measures for preventing the spread of contagious diseases of childhood should be insisted upon in the care of the teeth. A movement of physicians to secure public action on this matter will at once exert a moral force toward abatement of this evil. Mothers will be more watchful and painstaking to avoid the disgrace of decayed teeth in their children's mouths. Children will be moved to take a pride in spotless teeth; and in this age to acquire an ambition to have anything white and spotless about the person is commendable.

School life and conditions regarding caries are at their worst in our great cities and require the most urgent amendment. The inculcation of cleanly oral habits among children should be insisted upon. The hope of dentistry is to employ prophylactics instead of remedies, to prevent decay instead of treating it. It is just as important and as necessary to keep the teeth clean as it is to keep the hands and face clean, because all the food we eat must come in contact with our teeth. We do not like to eat when our hands are unclean, and why should we take pleasure in satisfying our appetites when our teeth are unclean? It is essential that a child be taught how to brush the teeth properly, and for this purpose I keep in my cabinet a toothbrush and set of teeth mounted with which I give a careful object-lesson. Printed directions are attached to the brush: "Brush the upper teeth downward and the lower teeth upward on their inner and outer surfaces, preventing injury to the gums, and effectively cleaning all the crevices of the teeth." A toothbrush drill at school is needful as any gymnastic exercise for the preservation of health. There is strong reason to believe that many diseases of the nervous system, respiratory organs, and alimentary canals, may be due to the fact that the masticatory organs have been neglected.

A paper on the theme of which I write would a few years ago have excited but little interest. To-day parents, teachers, influential citizens and even professional men, are being educated to the full comprehension of the fact that of all diseases of a parasitic nature to which mankind is susceptible, dental caries is by far the most frequent. The only proper course to pursue in dealing with this question is by persistently and intelligently educating the minds of the public as to its exact status, and whatever we wish to see introduced into the life of a nation, we must remember, must first be introduced into its schools. The school is the one force that can unify all conditions of society. Here we have the children of the nation in their entirety and we can if we will teach them that soundness of teeth is in itself one of the best evidences of general soundness of body.

We are now able to say to teachers and pupils that it has been proven beyond doubt that decay of the teeth is caused by two different processes, *viz.*, (1) chemical, (2) parasitical; that the prevention of dental caries depends, first of all, on strict cleanliness of the mouth and teeth, the importance of which cannot possibly be overestimated. The details necessary for the proper fulfilment of the same must be given in text-books, in public talks and in public press. Undoubtedly, it can be said that the toothbrush and plenty of clean water stand at the head of all measures of this nature, and that the next prophylactic means is the intelligent use of proper antiseptics. A tepid salt solution has been recommended as an inexpensive and effective antiseptic for rinsing the mouth, and where there is a tendency to bleeding of the gums powdered boric acid may be used. One thing not often spoken of in reference to cleaning teeth is the value of rinsing. Many patients know nothing about it and the average dentist does not think it worth while to mention it to them. The matter of closing the lips and forcing the water vigorously back and forth between the teeth exercises an important part in cleansing them.

An elementary outline of dental science, in language plain and intelligible, embodying a brief exposition of the actual present state of knowledge, and of so much anatomy as is incidentally accepted as authoritative, should be taught to, and studied by, all pupils of the public schools whose capacity will admit of it, and in the same manner as other like branches are taught and studied, if necessary with text-books in the hands of the pupils.

We want to emphasize the startling fact that the teeth of children have been deteriorating to such an extent that it has now become a serious matter. Of all causes of decay uncleanness is perhaps the most fertile. The clean tooth may decay—the neglected tooth must decay. It has lost its chance of self-defense.

Irregularities of the teeth, as shown by Dr. E. S. Talbot, are also on the increase, and there seems to be no plan by which the increase can be checked unless it be in the care of children's teeth and the observance of common-sense rules regarding extraction of the adult teeth. Check in the beginning irregularities which might prove mischievous if left unattended.

We want children instructed in the care of the mouth and teeth, in cleansing the whole mouth including the tongue, and the sooner this is done the sooner will the many evils arising from the present neglect be staved. Children must be taught some system of oral hygiene. See that school children receive thorough instruction as to the utility of good teeth. The teaching which a growing child imbibes in school sticks fastest in its memory. "My teacher told me to do it that way." Young minds are very susceptible and they would readily understand the situation, especially if told the calamities liable to follow the neglect of their teeth and mouths. These same

children will soon be the parents of the community in their turn, and they would have the advantage not only of better mouths of their own, but of being in a position to care for their own children. What has been done in the treatment of zymotic diseases, namely, an improvement in the condition of surroundings, is precisely what is required respecting the teeth. Instead of regarding the teeth as foes, children should be taught to regard them as special friends, and devote to them their best care.

We want to remove the possibilities of the propagation of disease in public schools through the present condition of children's mouths and teeth, and incidentally the discomfort of parents whose children have aching teeth, sleepless nights, distorted nervous systems, bad digestion, alveolar abscesses, foul and fetid breaths. When children are in this oral condition the whole system is out of order and they are more susceptible to disease.

We want periodical and systematic examinations of the teeth of children in the primary and grammar schools, whose ages range from six to fifteen years, having in view the prevention of their destruction. It is not proposed that the examination be made by or under the school authorities, but by such adjustment with them as shall not interfere with school-work or add a burden upon teachers. Dentists, who are members of dental societies and members of the graduating classes of dental schools, recommended by the deans, could be voluntary inspectors. Their reports (charts) should be given to pupils with instructions to hand them to parents or guardians. The form might include the words, signed by the teacher, "Your child or ward has been examined by the visiting dentist, and you are respectfully advised to have his mouth and teeth attended to."

Answering the question, why do we want instruction and inspection to prevent sacrifice of children's teeth, and the accompanying effects on their health, I would say:

1. Take it all in all, care of the teeth pays in comfort, in beauty, in the conservation of health from youth to old age. "Better take pains than to have pains take you."

2. It has been demonstrated that 95 per cent. of children have their permanent teeth decayed, ranging in number from two to sixteen per child. The magnitude of the evil appears at the simple mention of the fact. Can children with carious teeth grow into healthy adults? Can a race thrive whose children are so afflicted? When one has attained full growth it may not matter much whether the food is masticated by natural or artificial means, provided it is properly done; but with children it is a different matter, and the state of our children's teeth is a question of national importance. In chronic indigestion only two persons in one hundred have sound teeth.

3. Relatively, few children have teeth filled, and those under ten years of age rarely have the dentist's care except for the extraction of loose and aching teeth. Why is it that so large a percentage of our children, school-children, present features distorted, often due only to untimely, injudicious loss of teeth, deciduous and permanent? Because of ignorance or neglect.

4. The teeth and mouths of many children are in an unhealthy and disgusting condition, which not only injures their own health but also the health of the teachers and other children who are compelled to sit with them, it may be in overcrowded or ill-ventilated rooms. It ought not to be difficult to impress teachers with the danger which attends the exuding of pus from abscessed teeth. In every community there are those who are enthusiasts on the subject of pure and wholesome food, but whose mouths are in such a neglected condition that the air which passes through them is polluted and every mouthful of food swallowed carries bacteria with it into the stomach. The almost entire futility of sterilizing articles of diet for patients in whose mouths chronic abscesses exist, or whose teeth are covered with tartar mixed with mucus and food in a state of decomposition, need hardly be mentioned. A source of danger from decayed teeth is the possible introduction of parasites into the tissues with which the teeth are connected. Parasitic organisms are numerous in articles of food, both as usual and occasional associates, and as it is very difficult to prevent small particles of food from lodging in the cavities of carious teeth and there undergoing decomposition, it is not impossible that by such means, especially if the cavity is the root-channel of a dead tooth, a parasite might enter the soft tissues.

5. There is also another source of danger to the younger children who exchange pencils and chewing-gum, which after being in mouths mixed with pus are placed in the mouths of other innocent and unsuspecting children. These practices may be democratic, but they are vicious.

6. As to girls whose teeth are defective, in a few years they will be the mothers of the next generation. What about the claims of their children unless we now do our duty by the future mothers, and give them a chance to grow up as healthy women? Dr. D. Hayes Agnew said: "The world is becoming filled with a class of flat-breasted, spindle-limbed young women, unfitted for the varied and responsible functions of womanhood; qualifications, too, which under a different regimen and directed into proper channels would exert a most potential influence on all the great social and moral problems of the age."

The *British Medical Journal* and others have commented on the bad condition of school-children's teeth in England, "which may be looked upon as a national calamity." We have no basis for an accurate statement of conditions prevailing in this country. Teachers and casual observers believe that they are bad. No reliable information can be obtained, except under an order from the public health authorities, cooperating with school boards, providing for detailed examinations and reports.

According to Dr. Charles E. Bentley of Chicago, "In Berlin, Wurzburg, Cologne and Strasburg, Germany; in Salford and Leicester, England; Brussels and Antwerp, Belgium; Bordeaux, France; Tokio, Japan; Copenhagen, Denmark, and Canada, various systems obtain and the results are more than were looked for by their most sanguine promoters. In Toronto, Canada, no child can enter the public school who does not present a certificate to the effect that its teeth have been examined by a dentist. California and St. Louis are wide awake on this subject and are slowly paving the way for its consummation. Chicago has taken up the work in an organized way. Under the patronage of the Odontographic Society it has sent circular letters to the boards of education in all civilized countries in cities of 100,000 and over, asking them concerning such a movement and gathering data upon the subject. The classified answers will appear shortly under the direction of the Odontographic Society of Chicago. It is sufficient to say here, however, that the letter has stimulated the movement in nearly all places to which it has been sent."

And now some words of caution, in conclusion. As it is still an open question as to how far the public schools should cooperate and, unless the movement is well organized when the dentists go to school boards, we may be told that neither the necessity nor results would justify cooperation. I would say: Begin the work advisedly and as a severe piece of drudgery, but worth doing well. Have an adequate understanding of what can be done. It should not be a slipshod investigation. Such work should not be done by the teachers (who examined the eyes of public school children and the work was put forward as done by specialists, when in fact but a small fraction of the pupils were even seen by the alleged examiner), for unless done by dentists it would be an opprobrium to the profession and an obstacle to true hygienic progress. And then a mercenary motive may be imputed to the examiner—too often by his professional brothers rather than by the laity—and the whole matter fall under suspicion. If not paid for his service, it is inconceivable to some minds that a man who is really competent would devote much time to work that did not directly promise a money return; and as no fee is likely to be paid they think they have clear proof of ulterior and baser motives for his undertaking. This must, unfortunately, be expected by each investigator in this field and he must conduct himself most scrupulously if he hopes to live it down and carry through his examination and not find himself displaced by some rival, insensible to personal dignity and traditional propriety of conduct, who sees his way to coin advantage out of the matter.

If the labor is to be its own reward, the examiner will find his remuneration almost too abundant. It has been shown that, with proper preparations, a fairly complete examination of an individual can be made in from three to five minutes; but this is by most unremitting activity and no examiner can do many hours of such work a day. If he studies fifty in three hours he has well earned a rest. After ten such days, although scattered, the work would pall on any appetite not insatiable, and an investigation embracing one thousand school children made by or under the direction of any one dentist may be set as the limit for work pretending to be thorough. If not thorough, one such examination has probably as much worth as a million. Many points of real scientific value remain to be settled by investigations of the juvenile population which is presumably healthy. Much sound hygiene can be helped on by proper studies in this important field. May we hope that many will think of it as it deserves and weigh well the cost of participating in its trials and labors.

TUBERCULOSIS AND MODERN METHODS FOR ITS PREVENTION.[1]

By H. H. VINKE, M.D.,
of St. Charles, Mo.

The only excuse I have for bringing this subject to your attention is its extreme importance. Its importance is at once apparent when we learn that fully one-seventh of all mankind dies of tuberculosis and that all epidemics of contagious diseases combined—typhoid fever, smallpox, which is so greatly dreaded, scarlatina, diphtheria, cholera, etc.—do not cause nearly as many deaths. It is more universal than any other disease and claims its victims in all climates. It is certainly surprising and somewhat disappointing that this should be so, for we now know that tuberculosis is a contagious disease and that it is preventable. Although the tubercle bacillus does not constitute tuberculosis and although a receptive and suitable humus and other conditions are necessary to the development of this disease, it cannot be denied that the tubercle bacillus is the most important link in the chain of the different morbid conditions constituting tuberculosis. By a suitable humus we mean inability on the part of the body-cells to effectively resist the invading tubercle bacillus and prevent its growth. Few doubt to-day that tuberculosis is contagious and that in only extremely few cases can direct transmission from parent to infant be traced; in fact, we are safe in stating generally that tuberculosis is only exceptionally transmitted, but almost invariably acquired. Predisposition to this disease, or inability on the part of the body-cells to resist the invasion of the tubercle bacilli, may be transmitted and is transmitted, but such predisposition does not constitute tuberculosis; the presence of the tubercle bacillus is essential to make the chain complete, to render the existence of the tuberculosis possible.

Without the tubercle bacillus, on the one hand, we cannot have tuberculosis; without inherited lessened resistance on the part of the body-cells, on the other hand, we cannot have tuberculosis.

[1] Read before the St. Charles County (Mo.) Medical Society, May 15, 1900.

We cannot change faulty inheritance, but we can prevent or at least limit the possibility of the invasion of the system by tubercle bacilli. And inasmuch as the treatment of the tuberculosis, in spite of the progress we have been making, is as yet unsatisfactory, its prevention claims our careful attention. If the tubercle bacillus plays such an important rôle in the etiology of tuberculosis, it is essential to study through what avenues this bacillus or fungus, as some believe it to be, reaches the economy. The most usual way in which the system is infected is by the inhalation of air containing the dust of the sputum or of the oral and nasal discharges from a patient suffering from tuberculosis. Although it is probable that human and animal tuberculosis differ materially, and that the danger of infection from lower animals is not as great as is usually believed, there can be no doubt of the propriety and judiciousness of thoroughly boiling and cooking all foods derived from the animal kingdom. It is probable that the gastrointestinal secretions ordinarily in the adult would successfully resist the ingress of the tubercle bacillus into the system, but in infants and children such resistance would be much less effective. In a general way it may be stated that by far the most common source of infection is by the inhalation of air contaminated with the tubercle bacillus derived from man, and if all sputa containing the tubercle bacillus were at once destroyed or thoroughly disinfected, tuberculosis would become a rarer disease. It becomes, therefore, the sacred duty of every physician to teach the laity that tuberculosis is contagious and that in order to prevent infection of healthy individuals, the sputum and all excretions from tuberculous patients must be carefully disinfected. This can readily be done without giving offense to the unfortunate patient and without causing him to be looked upon with dread and alarm by other members of the family, by informing him and the family that nearly all diseases of the lung are infectious, that even a common cold is contagious, and that by using such extreme care in disinfecting the sputum and other excretions containing the tubercle bacillus we not only protect the healthy members of the family, but also protect the patient against reinfection. It cannot be denied, however, that in spite of these precautions the consumptive is a constant danger to society, and there can be but little doubt that society has a perfect right to protect itself against this dreadful destroyer of mankind by isolating those suffering with the disease in sanatoria, situated in places chosen for their healthfulness and fitted out with superior conveniences and arrangements for effecting a cure.

Every State, yes, every county, should have such a sanatorium, where at least those can be taken who cannot properly be treated at home, or who live in crowded dwellings, and are a constant source of danger to many lives. Isolation and treatment in sanatoria would be of immense benefit to the patient, for it would greatly enhance his chances of being restored to health, and it would be of incalculable benefit to society, for it would remove from intercourse with his fellowmen an individual who is a constant carrier and disseminator of thousands of deadly germs.

If it be true that tuberculosis patients are such a constant source of danger to their fellow-men, the very earliest recognition of tuberculosis in an individual is extremely important. The use of tuberculin, although not a success as a remedial agent, is known to be of great value as a diagnostic agent, but scarcely sufficiently devoid of danger to be a safe means for general use in determining the existence of tuberculosis. The early and frequent examination of the sputum by the microscope is certainly a most valuable means of arriving at a positive diagnosis, but some patients expectorate pus only late in the disease, few general practitioners are expert microscopists, and many patients have not the money to have the sputum examined at a laboratory. It is to be hoped that the time will come when every city in the Union, even the smallest one, will have an expert microscopist in the employ of and paid by the municipality.

Physical exploration readily discloses the presence of tuberculosis in an advanced state, but even an expert clinician may fail to recognize its presence by this means in its earlier stages. There are, however, a few simple modes of examining which reveal the presence of tuberculosis in its earliest stages and with reasonable reliability. The most valuable among these is a careful study of the temperature of the suspected patient. If daily examination in the afternoon of such a patient shows the constant elevation of temperature of from three-quarters to one and a half degrees for a week or two, which elevation of temperature cannot be otherwise explained, we may conclude that our patient is suffering from tuberculosis. This is a simple and reliable method of determining the presence of tuberculosis in its earliest stages, but although simple and generally known, it is much neglected. A considerable and fairly constant dilatation of the pupils is an early symptom of tuberculosis, and when found should lead us to look for corroborative evidence of this disease. Increased frequency of respiration in the absence of other lung and heart-lesions points to phthisis pulmonum. Prolonged expiration, the so-called "cog-wheel" respiration, is another early symptom. These are some of the more prominent objective symptoms of tuberculosis; the early subjective symptoms are marked emaciation and progressive weakness, pain of a pleuritic character over the region of the affected portion of the lung, night-sweats, etc. Hemoptysis, although usually occurring late in the disease, is occasionally an early symptom and in the absence of any mitral cardiac lesion a very important one.

In conclusion I will say I sincerely regret that I am unable to offer anything new on this subject, but if this short presentation tends to con-

firm in you the conviction that tuberculosis is contagious, that a special sanatorium is the proper place for the consumptive, and that it is our duty as medical advisers to instruct the laity to this effect, the object of this paper has been fulfilled.

THE ABORTIVE TREATMENT OF ACUTE MASTOIDITIS.[1]

By JAMES F. McKERNON, M.D.,
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At the beginning of this paper I am disposed to make an apology to the members of this Society for bringing before them such a seemingly threadbare subject, but in looking over the otological literature of the past two years I find the treatment set down for this disease by many competent writers so directly at variance with that of my own experience that I am prompted to bring the subject before you, not that I have anything especially new to impart as to its treatment, but rather to place it before you for discussion that I may learn as much as possible from the experience of others.

It is said by many who are practising otology to-day that the only rational means of aborting an acute inflammation of the mastoid is to apply either dry or moist heat around the external ear and over the mastoid process. It has also been said that heat so applied will abort four out of five cases of acute inflammation of the mastoid structures, besides making the patient at the time feel more comfortable and cause the existing pain to disappear.

Wishing to thoroughly test this method of treatment before condemning it, I tried it in ten cases of acute inflammation of the mastoid, four in children under eight years of age, and six in adults. The heat was applied in six case by having hot water pass through an ordinary Leiter coil at a temperature of 132° F. The coil was placed close to the mastoid, in the usual manner as when ice is used. This was kept up continuously for thirty-six hours. At the end of twenty-four hours the coil was removed and tenderness quite as marked as before treatment was found in two of the cases. In the four other cases the tenderness upon pressure had increased. The coil was then reapplied and at the end of thirty-six hours was removed and ice water substituted where before hot water had passed through the coil. The result was that in twenty-four hours after applying the cold treatment the tenderness had practically disappeared from five of the six cases. In the sixth there was still marked tenderness, but not to such a degree as before the ice was used. In this sixth case the coil was reapplied for twelve hours and when taken off there was only very slight tenderness present with even greater pressure over the parts than had been used twelve hours previously.

In the other four cases a hot-water bag as warm as the patient could bear it was kept against the mastoid. This was continued for thirty-six hours and upon examination the tenderness in two of the cases had diminished, while in the other two there seemed to be no change as to the tenderness and swelling. Wishing to give this method a still further trial, the heat was continued for twelve hours longer, the result being that three of the four cases increased in tenderness and swelling to such an extent that twenty-four hours after the removal of the heat they were operated upon, and in all three pus was found in the mastoid antrum and cells.

The fourth and last case exhibited at the time of the heat removal less tenderness and swelling than at the previous examination twelve hours before. This case was kept under observation for four days more and during this time there was always some tenderness upon pressure over the antrum and at the tip. The patient was then allowed to go home, only to return in five days with all of the former symptoms intensified. This time an ice-coil was applied and left in place for thirty-six hours, at the end of which time the tenderness had all disappeared, as well as the pain and post-aural swelling which had existed. This case was kept under strict observation for three weeks, being seen every other day, and during this period no symptoms of the former trouble could be found. In all of these cases there had been spontaneous perforation of the drum membrane previous to their coming under observation, and a purulent discharge was present in seven of them. In the other three cases the discharge was serous. Four of the ten cases exhibited some swelling back of the auricle and over the mastoid when first coming under observation. Of these four only one was in a child, the other three being adults. In all the cases the middle ear was drained freely and irrigation with 1-4000 bichloride practised. In short, precisely the same method was followed out as when cold treatment was used in my other cases. These ten cases were taken one after the other, as they presented themselves day after day for treatment. Certainly you will agree with me that here such treatment was not a success.

The successful abortive treatment of acute mastoiditis in a very large proportion of the cases is a simple matter, and without going too much into detail I propose to give here the treatment ordinarily followed out in a routine case when it comes under observation.

Treatment.—When the case presents itself for treatment we usually find on inspection either a purulent discharge coming from the external auditory meatus of the affected side, or a serous discharge, depending largely upon the duration of the disease or whether the middle ear has become subsequently infected after rupture of the drum membrane. In a very small number of the cases we find no discharge of either character,

[1] Read before the American Laryngological, Rhinological and Otological Society, Philadelphia, June, 1900.

and an inspection of the drum membrane shows us, usually, a bulging with a general redness over the whole surface of the drum and also marked congestion and swelling of the superior and posterior canal walls. In about half the number of cases coming under observation there is in addition marked tenderness over the mastoid, particularly that part situated directly over the antrum, a small amount of swelling directly behind the ear. In all cases so coming under observation, if the middle ear is not being drained sufficiently through the opening made by Nature, then this opening is enlarged by a free incision, and if the upper portion of the middle ear or attic be infected this incision is extended upward, opening Shrapnell's membrane, and still continued outward and backward through the tissues of the superior canal wall, thus making what has sometimes been called an internal Wilde's incision. Rarely have I seen a swelling of the superior or posterior canal walls, due to middle-ear inflammation, without a corresponding fulness in the attic region. But should it occur, this incision should be made freely through these structures. This done, the patient is placed in bed, absolute rest enjoined, an ice-coil applied snugly over the mastoid process, a free purgative administered, the canal irrigated every two or three hours (depending upon the character of the discharge) with a warm solution of bichloride of mercury, 1-4000, and the patient kept on a fluid diet. The coil is left in position for twenty-four hours, and at the end of this time we usually find upon its removal much less tenderness than had existed before and if all swelling has not entirely disappeared it has markedly diminished. Inspection of the canal shows us much less swelling in the walls where the day before it was marked; the drum membrane no longer bulges, has lost much of its inflammatory tint, and altogether we have the case going on to a rapid convalescence.

If after twenty-four hours of this treatment the tenderness over the mastoid has not almost entirely disappeared, then the coil is reapplied for twelve hours longer, the irrigation kept up as before, and when at the end of thirty-six hours from its first application the coil is left off altogether we have a case where the other mastoid symptoms have ceased, and only a diminishing discharge from the middle ear each day is left to treat, so that in a week's time the majority of these cases are discharged cured and remain cured, unless they are unfortunate enough to contract a subsequent inflammation of those structures.

In a very small percentage of the cases there will still be a marked tenderness over the mastoid at the end of thirty-six hours when the coil is removed. In these cases, if the temperature be under 100° F., the middle ear draining freely, and there is no increased fulness of the posterior or superior canal walls, then the coil is replaced once more for a period of twelve hours, and over one-half of this type of cases will from that time convalesce rapidly.

If, of course, at the end of this period all the symptoms and physical signs remain the same or have increased, then there is nothing further to be done but to open the mastoid and proceed with the classical operation.

In young children when the tenderness exists to any great degree after thirty-six hours of this treatment we should not again reapply the coil, but leave it off for a few hours and if the tenderness and pain still be present, then the mastoid should be opened without further delay.

As to the application of moist heat to the mastoid of a patient suffering from acute inflammation the result of acute middle-ear trouble, I am absolutely opposed to it. To be sure it does in a fair share of the cases diminish or stop the pain, but it does so at the very great expense of softening and undermining the tissues beneath it, so that when removed the disease can and does involve very rapidly this softened tissue.

I believe that at the outset, or when we first see these cases, we can by examining the discharge from the canal give a fairly definite prognosis at this early stage as to whether or not the case would go on to operation. In all the cases coming under my observation the discharge is examined and where the streptococcus is found in abundance in this discharge eight-tenths of the cases subsequently have to be operated upon, whereas, on the other hand, when the streptococci are absent, or only present in very small numbers, few, if any, of the cases reach the operative stage.

62 West Fifty-second Street.

MEDULLARY NARCOSIS DURING LABOR: A PRELIMINARY REPORT.

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Stimulated by the reports of Tuffier in *La Semaine Médicale*, in which appear the results of 63 operations painlessly performed by the use of cocaine injected into the subarachnoid space, the idea presented itself to me to utilize this method in order to mitigate, if not entirely allay, the agonizing pains of labor. Not until the work of Kreis appeared was I able to begin my experiments. The present article is simply and purely preliminary. The cases are too few to justify absolute deductions, yet they are sufficient in number to warrant me in stating that in the lumbar cocainization we have a method which is of the greatest value in producing analgesia, which checks almost entirely the pains of labor without, so far as personal experience goes, the least danger to mother or child. It is very astonishing and awe-inspiring to those of us who have seen many labors and heard the agonizing and maniacal shrieks of these poor women, to see the "parturient," under the influence of cocaine, lie

quietly in bed, feeling only some indescribable sensation, but without pain, bearing down when told to, and giving birth to her child without her knowledge, and only cognizant of the fact when the first cry of the new-born is heard. This truly is the "Utopian period" for which we have all longed. All this has inspired me with the greatest confidence in the method. The cases to be presented make very interesting reading and give us plenty of food for thought. Moreover, many minor operations were performed and all with very little or no pain. Pain if present was certainly bearable and infinitely lessened under cocaine as compared to such manipulations done without local or general narcosis.

Complications of a severe grade never occurred. Such are the observations of Tuffier and Kreis. Disagreeable, although very evanescent, features frequently occur. In fact none of my patients escaped without some evidence of general disturbance, such as nausea, vomiting, severe headache, throbbing and fulness in the head, slight increase in pulse-rate, chilly sensations and elevations of temperature up to 103° F. on the evening of the day of operation. That this is not due to the cocaine itself is proven by a control experiment in which, by mistake, a saline solution was substituted for the cocaine. That it is not due to sepsis in the ordinary sense of the word is proven by the fact that some after-effect, more or less severe, is noted in every case. It is most probable that these symptoms are due to a disturbed intraspinal pressure, whether diminished or increased we are not in position to state. In the case in which the salt solution was used by mistake, the pains of labor were not a bit influenced, but all the after-symptoms, such as we are prepared to encounter after cocaine injections, appeared. Fortunately all these disagreeable after-effects can be readily controlled by the use of 1/100 grain of nitroglycerin alone or combined with small doses of morphine. At best, unless very annoying, no attention need be paid to them, for in my experience they passed off without treatment in from six to twenty-four hours. Motor disturbances, so far as the uterus and its contractions are concerned, were not noted. In from seven to twelve minutes after the injections the pains were very much diminished or entirely allayed. The analgesia continued about three hours when the woman began gradually to feel the painful uterine contractions.

Reflex action of the abdominal muscle was found only in those cases in which cocainization was incomplete and was then accounted for by presence of some pain. When complete analgesia occurred there was no spontaneous bearing down and the abdominal muscles were not voluntarily called into action. Only on command did the patient bring her abdominal muscles into play and then as powerfully as if no cocaine had been used. Again, it is interesting to note that the loss of the pain sensation proves without doubt the falsity of the idea that uterine contractions are in any way dependent upon the pain produced in the pelvis by pressure of the fetus either upon the uterus in part or as a whole, or upon the tissues lining the pelvic cavity. If the needle be left in the spinal canal during a uterine contraction there is a decided increase in the escape of spinal fluid over that of the period between the contractions. This is probably due to an increase in tension in the vascular system within the spinal canal during the height of the pain.

The method employed at the Maternity Hospital is essentially that of the House Surgeon, Dr. Stone, to whom I am greatly indebted and profoundly thankful for his great interest in all the cases and the great skill and care he exercised in their behalf. All the punctures were made by him and notes accurately taken either by him or under his direct supervision. I shall describe the operation in the words of Dr. Stone. The patient's back, from the coccyx to the middle of the dorsal vertebræ, is thoroughly scrubbed with tincture of green soap and alcohol and ether. This is followed by a saturated solution of permanganate of potash which is removed by a supersaturated oxalic-acid solution. The entire area is then covered with sterile towels. A needle about ten cm. long is employed with a metal hypodermic syringe, both of which are boiled ten minutes. The patient is placed on the side with arched back. The thumb of the left hand is placed on the spinous process of the fourth lumbar vertebra. (This point may readily be found by locating the deep depression between the spine of the last or fifth lumbar and first sacral, the posterior landmark of the external conjugate, or, in very fat women, a line drawn joining the highest points of the crista ilii will pass over the center of the fourth lumbar vertebra and is a reliable guide.) The needle is inserted half an inch in front of and just outside the edge of the thumb at an angle of about 165°. The direction of the needle is from below upward and without inward. If the point strikes the lamina it is to be moved gently up or down until the space between the vertebræ is felt. The puncture may be made either between the third and fourth or fourth and fifth vertebræ. The point is then pushed slowly and gently downward until the spinal fluid is seen running out. Ten minims of a cocaine solution, representing gr. 1/6, are now injected and the needle withdrawn. This is all that is necessary.

Case I.—H. B., aged thirty-three years; multipara; anemic; double femoral hernia. August 7th, in labor at 11 P. M.; presentation L. O. A. August 8th, membranes ruptured 3.30 P. M., os fully dilated; 3.48 P. M., cocaine injected; 3.56 P. M., pain sensation dulled and delayed; 3.59 P. M., muscle and motor sense not affected; sensory paralysis complete below the level of the umbilicus; uterine contractions every two minutes; patient has no painful sensations; 4 P. M., child born spontaneously without the knowledge of the mother. 4.22 P. M., placenta born spontaneously and after a lapse of ten minutes the mother asked if after-birth had come. The fol-

lowing afternoon the temperature rose to 100.5° F., but fell to normal in eight hours. Three hours after the injection the patient experienced a tingling sensation in her legs and thighs. During the next ten hours a slight throbbing headache was felt which disappeared in twenty-four hours without medication.

Case II.—K. S., aged thirty-five years; multipara; previous labors normal with great deal of pain during the second stage; physical condition poor; patient has hydramnios to extreme degree. August 11th, 2.30 P. M., patient went into labor; 6 P. M., waters broke; cervix presents; os admits four fingers; head presenting above but fixed at brim. August 12th, 9 A. M., pains all night, no effect on os; contractions have now ceased. August 12th, 1.47 P. M., lumbar injection of gr. 1/6 cocaine; 1.52 P. M., sensation to pain diminished and delayed; 1.56 P. M., absolute sensory paralysis below the umbilicus.

Manual dilatation was begun and during its performance the patient gave no evidence of knowing what was taking place. The operation was as easily carried out as under chloroform narcosis. The head was then above the brim. It was then decided to leave the patient unmolested to see if labor would proceed spontaneously without any complication. She was therefore put to bed, version or high forceps being abandoned for the sake of the experiment. In 12 hours the woman broke out in a profuse sweat; temperature, 102° F.; pulse, 90; respiration, 60; slight headache. In twelve hours the condition returned to normal. The following day labor-pains again appeared and in five hours the child was born spontaneously; normal, severe, second-stage, labor pains.

Case III.—Proved to be a control test. S. D., primipara, aged twenty years. August 12th, in labor at 6 A. M.; in twelve hours os fully dilated; 1/6 gr. cocaine injected; no effect whatsoever. In forty minutes another 10 minims of the same solution and still no effect. As the patient became very nervous and hysterical it was decided to use chloroform and deliver by forceps. Later on, having the cocaine solution tested by various methods, it was found totally inert. This case proved to be an excellent control test, as did the case in which the saline solution was used by mistake. And here also in three hours the patient complained of headache, tingling in the legs, slight nausea and vomiting. In fourteen hours the temperature rose to 102° F.; pulse, 100; respiration, 28. Condition returned to normal in eight hours.

Case IV.—M. I., aged thirty-eight years; multipara; condition excellent; previous labors normal. August 13th, 3 P. M., in labor; V. L. O. A.; head in cavity; 3.48 P. M., cocaine gr. 1/6 injected; 3.53 P. M., sensation below umbilicus delayed for pain; 3.55 P. M., total sensory paralysis below umbilicus. Patient had no knowledge of the uterine contractions which occurred normally every two minutes. 4.28 P. M., head at outlet and forceps applied without the patient being aware of the operation. 4.32 P. M., patient delivered; the mother was conscious of the traction alone. She wished to know why she was being pulled to the bottom of the bed. 4.40 P. M., perineum repaired without pain; 4.55 P. M., placenta expressed, sensation of mother was as if something warm were passing through the vagina; 5.15 P. M., sensory paralysis still present; 6.45 P. M., sensation restored to lower part of body; 7 P. M., patient complained of intense throbbing headache referred to frontal lobes; 7.45 P. M., morphine, gr. 1/4, nitroglycerin, gr. 1/50; patient felt cold and was shivering; 8 P. M., vomited, head symptoms less; rise of temperature to 101.5° F.; pulse, 88; respiration, 22; twelve hours later patient in normal condition.

Case V.—L. M., aged thirty-five years; multipara; admitted to surgical ward with cellulitis of leg and thigh. August 18th, 10 A. M., membranes rupture spontaneously; no labor pains. Transferred to septic ward; V. R. O. A.; os nearly dilated; prolapse of cord, pulsation 120 per minute; no contractions. 11.45 A. M., pulsation had fallen to 100; indication to deliver child. 12.45 P. M., cocaine injection, gr. 1/6; 12.50 P. M., sensation to pain delayed and one minute later complete sensory paralysis; slight nausea and vomiting; burning sensation along spinal cord and feeling of cold in feet and legs; podalic version was performed without any pain to mother, although she expressed a feeling of suffocation when the hand was being introduced into the uterus; 1 P. M., child born by extraction. Mother had no knowledge of its birth. During the version the uterus contracted firmly around the operator's hand so that manipulation was very trying.

Case VI.—R. M. aged twenty-six years; primipara. August 19th, 9 P. M., labor began with rupture of the membranes; child presenting foot. August 20th, 6.30 A. M., os fully dilated, pains not severe nor frequent; 7.21 A. M., cocaine injection, gr. 1/6. During the next thirty minutes the only change noted in the patient's condition was slight dulling and painful sensation to pinprick and slightly delayed pain sensation; 7.51 A. M., injection repeated; patient complained of burning in lower extremities; nausea and vomiting; profuse sweat; 8.20 A. M., sensation entirely gone; hand introduced without pain, both feet brought down; 8.26 A. M., child delivered in usual fashion unknown to mother, a second child is found in utero; 8.50 A. M., hand introduced into uterus, macerated fetus discovered; 8.55 A. M., child delivered, mother still oblivious of any pain or discomfort. The uterus continued to contract regularly and strongly up to birth of first child; 9.15 A. M., neither placenta having come away, the Credé method was unsuccessfully tried; 9.35 A. M., an attempt was made in succession by the entire house-staff to remove the placentæ manually, but because of the pathological adherence and the

spastic contraction of the uterus it was found impossible to remove them. During all this manipulation the patient did not complain of pain or discomfort. Chloroform was now administered to the surgical degree. Dr. Stone then made the attempt but it was still found impossible to remove placentæ, as the same conditions obtained as during the cocaine analgesic, *i. e.*, placental adhesion and a spastic uterus. The uterus was accordingly packed with gauze and the patient put to bed. At 2 P. M. I made the attempt to remove the placenta under local cocaine narcosis, 1/6 gr.; 2.08 P. M., sensation delayed and dulled, the hand was introduced and the placentæ peeled off. The uterine contractions were not as strong as normal, nor did they materially interfere with the manipulation; 3.30 P. M., nausea and vomit; sensation to pinprick dull, anesthesia continues; 5 P. M., temperature, 100.8° F.; pulse, 90; some headache, but not severe; no medication employed and the condition became in every respect normal in twenty-four hours. This patient received half a grain of cocaine in less than seven hours.

As to the future utility of this means of annulling the pains of labor we have little to say. So far our results have been more than satisfactory and from our limited experience we can honestly state we apprehend no danger. Whether remote dangers are to be anticipated from the use of cocaine in this fashion, our cases are too recent to give us any clue, accordingly, I am not as yet prepared to recommend such measures in private practice and will not do so until my hospital experience shall fully justify it. In addition to the cases reported above I would suggest the use of this method in cases of prolonged and tedious labor; anesthesia can be produced without interrupting the course of labor in any way. If we could but put in writing the expressions used by the women whose cases have just been narrated, the blessing showered upon us, their thankfulness to all about them, nothing further need be said. One more word and I am done, and that is that it might be of great value in cases which would otherwise demand the introduction of the hand under chloroform for purposes of exploring either the pelvic or presenting part. Here a cocaine injection ought to be of the greatest value and assistance.

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MEDICAL PROGRESS.

Suprarenal Extract in Rhinology.—Another very favorable report is made of the use of the suprarenal extract in nasal diseases by S. Oppenheimer (*N. Y. Med. Jour.*, August 18, 1900). The active principle, or ischemic element, is probably in the medullary portion of the gland and is evidently a product of the normal glandular metabolism. On account of the animal matter present in the powder, putrefactive changes quickly occur and hence the solution cannot be kept any length of time. The drug possesses two distinct actions when locally applied to a mucous membrane, the first being the absolute blanching of the parts, followed by an almost imperceptible constriction which rapidly increases until in some regions the mucous membrane may be contracted down upon the osseous structures. In epistaxis it is one of the most certain remedies employed. After considerable experience the author does not believe that the drug possesses any influence over hay fever when taken internally, but has an almost immediate effect when applied locally by spray or pledget of cotton, and this result may be maintained by directing the patient to use the spray at sufficient intervals. In operative procedures upon the upper respiratory tract it is strikingly indicated. Many simple operations may be performed with the loss of practically no blood at all. The method giving the best results seems to be to apply a pledget of cotton saturated with the adrenal solution to the site of operation for five minutes. The solution is made by adding ten grains of the extract to a dram of sterile water and allowing it to macerate for twenty minutes when it is filtered, and glycerin or boric acid added. The pledget soaked with suprarenal solution is then replaced by one saturated with cocaine or eucaine for five minutes. A fresh pledget of cotton with the adrenal solution is again applied for the same length of time, and when it is removed the parts will be found perfectly bloodless and totally anesthetic. The adrenal has no action upon the blood itself; it is perfectly clean and does not cause subsequent irritation from firm large clots, but it is not anesthetic. It may be placed in the hands of the patient with the confidence that no habit will be formed.

Treatment of Morphine Habit.—According to the experience of J. H. McBride (*N. Y. Med. Jour.*, August 18, 1900), comparatively few people are permanently cured of the morphine habit. The whole moral character of the patient has been altered so that even when the drug has been entirely removed for some time, the will-power is usually insufficient to resist the temptation to relieve the mental as well as physical suffering which is liable to recur at times. As the drug is withdrawn it leaves a weakened hyperesthetic condition of the nervous system that involves the mentality as well as the body, and which raises the suffering to an intensity that is perhaps not excelled by that of any kind of sickness. In reducing the drug it is well to appreciate that small doses relieve the suffering nearly as much as large ones, so that in a rapid reduction method, which is the one usually followed now, when large doses have previously been taken considerable diminution can be made each day until a daily amount of one and a half or two grains is reached. The reduction should then be made much more gradual. An important principle to

note is that the patient should be allowed to recover from each reduction before another is made. To relieve the general and intense feeling of uneasiness and pains in the limbs, the best remedy is frequent hot baths. The mixed bromides are very good but bromism should never be produced. Of the tonics, quinine, nux vomica and strychnine are the best. Rest in bed and daily massage are very beneficial to relieve the suffering. When the patient has quit the drug, and may be comfortable without it, the cure is still far from complete, for to turn him loose with his shattered nervous system and weakened will is to invite a return to the habit with additional injury. It is necessary to give the patient a thoroughly normal environment which, acting unconsciously over a long period without a hint of the end for which it works, will enable the person to change the morbid fashion of his thought and regain the habits of sanity. These people are men in rights and privileges, but they are children in impulse and unregulated lives.

Action of Gelsemium Upon Central Nerves.—Since Nissl's method of staining nerve-cells has come into general use by the experimental pathologist, the action of numerous drugs upon the nervous system has been microscopically investigated. R. H. Whitehead (*N. Y. Med. Jour.*, August 18, 1900) has reported the changes which he has observed in the cranial nerve nuclei after poisonous doses of gelsemium. Acute poisoning of a two-months-old rabbit resulted in what he calls "initial chromatolysis." The Nissl bodies are abnormally large and rather indistinct. The achromatic spaces are smaller and often faintly stained, and since the chromatic bodies are not deeply colored the cell-body has the appearance of a spongy fibroid mass with but little achromatic substance. In cases of slow poisoning the Nissl bodies are few in number, of large size, and situated principally around the nucleus. They also seem to be much fragmented in some cells. He believes that toxic doses of gelsemium produce chromatolysis of the cells which constitute the nuclei of the motor cerebral nerves, and that the alterations are not specific, but are very similar to the changes produced by other toxic substances on the motor cells.

Extrabuccal Feeding.—Feeding by the mouth may be avoided either by (1) rectal feeding by means of nutrient enemata; (2) feeding through the cutaneous surface by subcutaneous or intravenous injections, or (3) feeding after gastrostomy. Although none of these methods are capable of supporting life indefinitely, and none can answer the demands of the metabolism of a normal body, yet they are very beneficial in maintaining for a time the nutritive balance of a weakened condition. C. A. Ewald (*Med. Rec.*, August 18, 1900) has written a very suggestive article on this subject. Since the large intestine is almost entirely devoid of peptonizing power and possesses very slight amylolytic power, it has been suggested and was for many years considered rational to use only predigested foods, such as peptones, albumose preparations and pancreatic meat enemata. Investigations have shown, however, that when very considerable amounts of nitrogenous substances are administered by rectum ninety to ninety-five per cent. are absorbed. The specially prepared substances usually irritate the intestine and it becomes necessary to revert to the native egg albumin and milk. In regard to carbohydrates it has been found that considerable quantities of grape sugar may be absorbed from the intestine, but the solution must not be too concentrated nor be injected in too large quantity. Cane sugar is perhaps not so absorbable, but is believed to be less irritating. Very little sugar is broken down into lactic and acetic acids, for absorption takes place so rapidly that decomposition is usually impossible. Fats are very poorly absorbed, but if the fat be mixed with pancreatic gland-substance ninety per cent. even may be taken up. The following combination is considered the best by Ewald: Two tablespoonfuls of wheat flour are stirred into 150 cc. of lukewarm water or milk and to this mass one or two eggs with a pinch of salt are added, and the whole is beaten up with 50 to 100 cc. of a fifteen-per-cent. glucose solution. The addition of a small amount of claret acts as an analeptic. Such an enema corresponds to about 450 calories of which, to be sure, only a portion fulfil their physiological destiny. The nutritive value may be changed to suit the individual case and peptones or other predigested foods may be added, but the more complicated the composition of the enema, the more difficult it is to prepare and the more irritative it usually becomes. Experiments upon animals have shown that subcutaneous injections of oils and fats will furnish nutriment to the organism and that body fat can be manufactured from these. The author has several times injected from 80 to 100 cc. of sterile oil into the subcutaneous tissues in the course of half an hour. This method occasions great pain, however, can seldom be used in private practice more than once or twice, and is very liable to cause abscess formations, necrosis, or fat embolism. Feeding through gastric fistulæ is very valuable in cases of stricture of the esophagus, especially when benign, and in these cases can often be maintained for months or years. When malignant disease is present, the conditions are usually so unfavorable that protracted feeding cannot satisfactorily be accomplished. He concludes that extrabuccal feeding does not completely replace feeding by the mouth, and, in most cases in which this method is exclusively resorted to a state of malnutrition sets in from the beginning. When the metabolism is below normal it may be possible by nutrient enemata to cause an accumulation of nitrogenous substance and fat. The best results are obtained when only a temporary replacement of the natural feeding by mouth is desired. The enemata are much preferred to the subcutaneous injection of oil.

Migrated Ovarian and Parovarian Tumors.—G. M. Edebohls (*Med. Rec.*, August 18, 1900) contributes 4 new cases of these conditions, as follow: Case I., gangrenous monocyst, presenting all the characteristics of a migrated parovarian cyst, removed from the omentum by operation; cure. Case II., large strangulated left parovarian cystoma free in the abdominal cavity, its pedicle having just been completely severed by torsion; left ovarian ligament and left Fallopian tube pulled completely out of the cornu of the uterus; coexistence of umbilical hernia; parovariotomy and radical herniotomy; cure. Case III., self-amputation of a left ovary and tube; intraligamentous right ovarian cystoma; chronic metritis and appendicitis; celio-oophorosapingohysterectomy; inversion of the appendix; cure. Case IV., migrated dermoid of the right ovary; left ovarian cystoma; bilateral ovariotomy; amputation of the omentum; inversion of the appendix; cure. The author tabulates from literature 43 other pertinent cases summarized: Free ovaries, 3 (1 right, 2 left); parovarian cysts, 3 (1 left, 2 side not stated); ovarian cysts, 21 (12 left, 3 right, 6 side not stated); ovarian dermoids, 15 (9 left, 5 right, 1 not stated); 1 left cystosarcoma of the ovary.

Posterior Colpoceliotomy.—Speaking from the standpoint of the general surgeon C. G. Cumston (*Med. Rec.*, August 18, 1900) regards this method as the best for all cases except the following: Acute pelvic peritonitis, cystic purulent salpingitis adherent to the vaginal wall (except for evacuation and drainage), old extensive bilateral lesions with much dense adhesion (except for total vaginal hysterectomy). Except for encysted salpingitis the abdominal route is the best when intestinal adhesions are present. It is difficult to diagnosticate these, but disturbances in defecation and digestion, intestinal dyspepsia, colic, chronic intestinal occlusion, gas felt when a certain part of the tumor is palpated may be regarded as fair indices.

Chronic Proliferating Osteomyelitis.—B. Kozlovsky (*Revue de Chirurgie*, June, 1900) gives the history of several cases, of which the following is typical. A man, aged forty-three years, entered the hospital complaining of intense pain and swelling of the femur; examination revealed the presence of a cylindrical, fusiform, hard, resistant, non-fluctuating tumor of the femur; no antecedent syphilis or other complaint; the diagnosis of sarcoma was made, but the patient refusing operation, a cure was effected by mercurial treatment and by baths. This case, with others cited, is similar to those described by Kocher, as a form of suppurative ostitis, which is vascular and proliferating, having a chronic tendency, the granulations presenting something of the appearance of a sarcoma. This proliferating or fibrous osteomyelitis is a rare disease, which is often confounded with syphilis, tuberculosis or malignant neoplasm.

Urotropin in Cystitis.—From an extensive series of investigations B. Goldberg (*Centralbl. f. innere Medicin*, July 14, 1900) reports as follows: Urotropin is sometimes inefficient in spite of large doses given for long periods and its effects are not dependent on the kind of bacteria, as with the same kind of infection the results were favorable in some and unfavorable in others. Its value depends more on whether (1) the cystitis, as a primary bacterial invasion, develops in a healthy urinary tract, in which condition the author had 40 per cent. cured, and 60 per cent. improved, or (2) whether it associates itself with a preexisting disease of the tract, as stricture, hypertrophied prostate, tumor, paresis, nephrolithiasis, tuberculosis, gonorrhea, etc. In these cases urotropin alone is useless, yet combined with local treatment, while there is little hope of cure, there may be much alleviation of the symptoms (in 49 cases, 4 cured and 30 improved). If (3) the cystitis is secondary to an infection of the urine, urotropin, like santal and salol, is utterly useless (10 cases, 10 failures).

Chloretone.—F. F. Ward (*Medicine*, August, 1900) recommends this drug as the best general hypnotic, more certain than trional and sulfonal and less harmful. The only after-effect observed was a slight headache after taking the drug for several nights. He also uses its combined sedative and local anesthetic effects in excessive hyperacidity of nervous origin, in epigastric pain which interrupts sleep, and in acute alcoholism. In the latter case it should be given in ten-grain doses in half an ounce of whiskey or brandy, followed in fifteen minutes by a raw egg beaten in milk. Ordinarily the dose is three to five grains in powder, capsule, or in whiskey, repeated if necessary. It is soluble in 100 parts of water and quickly so in twelve parts of alcohol. In whooping-cough, a child of four years took two and a half grains in half a dram of brandy, with relief of the paroxysm and quiet sleep.

Some Experiences with the Schleich Mixture.—P. Ilyin (*Klin. therap. Woch.*, July 29, 1900) has employed the Schleich solutions in 135 cases and is well satisfied with the results. All disagreeable symptoms of ether narcosis, such as salivation and bronchitis, were but rarely noticed and as long as respiration was active sudden death, which is liable to occur after chloroform administration, seemed to be impossible. Depending upon the age, from 0.98 to 2.70 cubic centimeters of the mixture were found necessary per minute to keep the patients under. Excitation was noticed in 25 cases, nausea in 10, convulsive movements in 3, trismus in 2, and temporary cessation of respiration in 2, one of which was an extremely weak child suffering from post-scarlatinal osteomyelitis. Respiration becomes more frequent and deep and is most rapid when complete narcosis has set in unless dyspnea is present when an increased rate is not observed. There seems to be a close association between the de-

gree to which the patient is anesthetized and the number of respirations, for when the patient is allowed to come out the normal rate gradually returns. The pulse is full and not rapid; as consciousness returns, it becomes more frequent and weak. The author believes that, owing to the physical properties of the mixture, one can regulate the amount within perfectly safe limits by carefully and constantly watching the respiration and circulation.

Antigonorrheal Injections.—L. Casper (*Semaine Médicale*, July 18, 1900) uses sulphate of zinc as the adjuvant and corrigent through its astringent and antiphlogistic qualities of silver nitrate and permanganate of potash. These salts are the very best antiseptics for combating the gonococcus, with the disadvantage of exciting some irritation and increased secretion. His method of proceeding is as follows: As soon as the acute symptoms appear injections of silver nitrate solution, 0.10 per cent., alternating with sulphate of zinc solution, 1 per cent., are given at least six times in twenty-four hours. The silver is gradually increased to 0.25 per cent. and the zinc to 4 per cent. After the discharge grows less the silver is withdrawn and permanganate of potash solution, 1:10,000 or 1:8000, is still alternated with the zinc. This method, together with the hygiene usually recommended, relieves in four to five weeks, as is proved not only by absence of discharge but also by disappearance of shreds from the urine. In chronic urethritis cure is accomplished by injecting silver nitrate instillations, 1 to 2 per cent., every two days, alternating with copious urethral irrigations of potassium-permanganate solution slowly increased from 0.20 to 1 per cent. Meanwhile the patient uses daily injections of sulphate of zinc, 2 per cent.

Obstetrical Anesthesia by Cocaine.—E. Bumm and his assistant, O. Kreis (*Semaine Médicale*, July 18, 1900), have been using cocaine injections into the lumbar spinal canal in obstetrics after the method of Bier, devised for and hitherto limited to general surgical procedures. They report six cases, of whom five were primiparæ. In these patients, after the os had fully dilated, they injected into the subarachnoid space 0.01 centigram of chlorhydrate of cocaine, following the technic recently set forth by Tuffier. After five or ten minutes there appeared entire anesthesia of the lower part of the body from the costal border, analgesia, depression of tactile sense, continuation of the normal rhythm and intensity of the uterine contractions absolutely without pain and only with a sense of tension in the abdomen, and, finally, absence of any need of "pushing" or "bearing down," although voluntary movements were in no wise suspended. Further all pain from the pressure of the head in the vagina was absent. In two cases there was normal termination of labor; in two forceps were used and one was a breech case, and in one suture of lacerations was done, all with no distress whatever. The after-treatment was in no way complicated. The drug caused no bad symptoms, save a little cephalalgia, vertigo and nausea in one patient. It seems too early to draw definite conclusions, but the field of usefulness of cocaine seems to be widening.

The Diagnosis of Phrenic Hernia.—Almost all cases of this condition are determined only at the autopsy table, says C. Hirsch (*Münch. med. Woch.*, July 17, 1900). The following detailed physical signs were shown by his patient who was admitted with the diagnosis of pneumothorax: Medium size, poor nutrition, feeble muscular system, thick fat deposit, no dyspnea, slight subjective oppression and tension in the left side. The thorax showed normal breadth, slight flattening in the upper part, left side slightly more bulging than the right, ribs distinguishable, respiration delayed on the left but not decreased; in front on the right side and on the left side only as far as the fourth rib, sonorous note with high-pitched resonance becoming more and more tympanitic downward; no possible sharp demarcation between the lung and the stomach; no cardiac dulness on the left side; toward the axilla, more and more tympany but no changes in the respiratory tone; behind, on the right, the lung limit descends to the tenth or eleventh dorsal spine; on the left as far as the angle of the scapula more and more sonorous tone with tympany later, below this level feebler tone; no distinction possible between stomach and lung outline; vocal fremitus on the right, normal; on the left, behind in the axilla and in front below the fourth rib, much decreased; auscultation normal on the right side; on the left, vesicular sharpened murmur over the resonant portion above, below, over the tympanitic, ringing-tone area enfeebled and occasionally metallic respiration and ringing sounds, not synchronous with the respiratory act and closely resembling the noises heard over the normal intestines and stomach; no succussion perceptible; apex beat and cardiac dulness to the right of the sternum; normal heart; liver, spleen, nervous system and extremities normal; double hernia. A diagnosis of phrenic hernia was suggested and established by the radiograph, especially by means of a rubber tube filled with quicksilver and pushed down into the stomach, where, folded upon itself, it occupied the tympanitic zone in the left chest. The autopsy still further demonstrated a hernia of the stomach and part of the duodenum into the left chest with displacement of the heart to the right.

Retinitis Albuminuria.—This disease of the eye occurs chiefly in the chronic form of kidney disease, but also may occur during the albuminuria of pregnancy, after diphtheria, scarlet fever, and sometimes after measles. The retinitis usually appears when renal symptoms have been fully declared, but it may be the first symptom

noticed. Uremic symptoms may, or may not, have been present. The local changes vary greatly in severity, and sometimes amblyopia is present without any visible fundus changes. J. J. Mills (*Maryland Med. Jour.*, August, 1900) says that he has found changes in the macula region more often than in the optic nerve, although sometimes the nerve is affected and the retina scarcely at all. It is unusual to find one eye only involved, although frequently one eye is more affected than the other. The author reports three cases which he considers to be of unusual interest. Case I., a boy of nineteen years, was suffering from severe headaches. Two years previously vision in the left eye had become defective. Complained of no other symptoms. Examination of the fundus of left eye showed a large white patch of degeneration in the macula region. No other changes observed. Right fundus normal. Examination of his urine showed a large amount of albumin, and he died five months later. This case is interesting because (1) only one retina was affected, which is most rare; (2) the eyes first called attention to the kidneys; (3) the youth of the patient. Case II., student, aged twenty-seven years, called on the writer for glasses. One year previous had had headaches, but none recently. There was an insufficiency of the right external rectus. Patient cannot always maintain binocular fixation and has diplopia when fatigued. The right fundus also was normal except for a very small hemorrhage, and a smaller white patch, just above the nerve head. Examination of his urine showed albumin in abundance. Patient has since broken down in health. The interesting points in this case are the fact that the asthenopic symptoms led to the ophthalmoscopic examination, and this to the discovery of kidney trouble. Case III., female, aged seventy-six years, had a sudden attack of vertigo followed immediately by diplopia, which had lasted two weeks when seen by the author. There was a paralysis of the right external rectus, with marked convergent strabismus. Because of the diplopia she could not walk alone. Micturition was very frequent. Some shortness of breath was present. No other symptoms except the diplopia and failing vision of right eye, for which she asked relief. Examination of right fundus showed a typical fatty degeneration of the fibers of Muller, producing a stellate appearance in the macula region, and a rather unusual row of interrupted hemorrhages on the right. The left fundus was normal. Urinary examination showed albumin. The interesting points of this case are the paralysis of the sixth nerve, and the fact that the strabismus and defective vision led to the discovery of the kidney disease. Mills illustrates his findings in these three cases by sketches of the diseased fundi.

Pancreatitis.—W. M. Robson (*Lancet*, July 28, 1900) calls attention to pancreatitis, the essential cause of which is bacterial infection. Acute pancreatitis takes the form of acute peritonitis beginning in the epigastric region with severe paroxysmal pain, tenderness, distention, vomiting, constipation, and slight icterus. The temperature is very variable, the pulse is rapid and small. Death usually occurs in two to five days from collapse. The subacute form may begin suddenly with vomiting, pain and constipation which in a few days give place to diarrhea with very fetid stools, sometimes containing blood and pus. Collapse is not so marked; temperature is more irregular; the local signs develop more slowly; there is well-marked pancreatic tenderness, and under an anesthetic the pancreas is often felt to be swollen; albuminuria is pretty constant, but glycosuria and lipuria are rare. There is constant, dull epigastric pain with acute exacerbations. The more urgent symptoms may disappear, but emaciation continues, and relapses usually occur until death supervenes. With abscess formation there is a tender swelling behind the stomach, and the pus may burrow into the gastrointestinal tract, the peritoneum, or may follow any of the various fascial planes. Death is the usual termination. Chronic pancreatitis, at first hypertrophic, later cirrhotic, is more common than the acute or subacute forms, and often resembles malignant disease of the head of the pancreas. It usually arises by extension from gastroduodenal catarrh and is often associated with biliary or pancreatic calculi. The onset may be gradual and painless, or with severe pain, nausea and vomiting, followed by jaundice. The pain is not over the gall-bladder, but is in the median line. Tenderness is in the median line a little above the umbilicus. Paroxysmal pain may be repeated at intervals, or there may be steady, deep, dull pain. Jaundice tends to deepen after it once appears. Loss of flesh and strength are constant symptoms, with anorexia, flatulence and a sense of epigastric fulness after eating. Often there is fetid diarrhea with fatty stools. Albuminuria is common. In the later stages with jaundice hemorrhages from mucous membranes and petechiæ in the skin are common. Temperature is very variable. Death results from asthenia. When the bile-duct is obstructed by the cicatricial process the gall-bladder becomes distended but is free from tenderness. Adhesions with neighboring viscera are usually well marked. Surgery offers the only hopeful line of treatment. In acute cases the diagnosis is usually not clear, and most of them result in acute epigastric peritonitis. The treatment of acute and subacute cases consists in drainage, preferably through the posterior body wall. Chronic pancreatitis is best treated by cholecystostomy, or cholecystenterostomy, which, by relieving tension, leads to a subsidence of the pancreatitis, then to an opening of the common duct, and so to a cure. Since this disease closely resembles malignant pancreatic disease, and is greatly benefited by operation, one should not refuse operation even when the diagnosis of malignancy seems assured.

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SATURDAY, AUGUST 25, 1900.

THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.

We are glad that we have been able to furnish our readers with a prompt account of the proceedings of the Paris Congress. The 420 Americans who are registered as members show how lively an interest the medical profession of this country is taking in the last International Medical Congress of the century. As a rule the proceedings of very large medical associations are apt to prove unsatisfactory from the standpoint of expected advances in medicine. Often the commonplace is the subject of discussion and the absentee may feel that he has not missed much after all. As a matter of fact, it is not because of the discussion of the new and unknown that large medical congresses are of benefit to the profession. Their work is rather to facilitate and encourage contact of minds and men and ideas. The influence of men and their ideas upon one another on occasions like this is often unconscious, but is not the less valuable. No one can calculate the amount of practical good which has resulted for this reason from the twelve international medical Congresses that have preceded this one.

This year's Congress has far surpassed its predecessors in every respect; in the number of attendants, in the enthusiasm of the reception, the cordiality of all concerned, the number of special reports on difficult questions, and, finally, in the number of papers presented, which exceeds 1200 in all. Each triennial meeting proves more cumbersome than its predecessors in its almost infinite detail, yet who shall say that the international meetings shall ever outlive their usefulness? They always serve to bring together the widely separated members of a profession whose single object must be accomplished by practically the same means all over the world. We do not hesitate to predict that the international medical congress, as a triennial feature of current medical history, will surely not be allowed to lapse in this generation.

The special reports submitted to the Medical Section on ulceration of the stomach, on mucomembranous colitis, on the pathogeny of gout, on pulmonary edema, and on kidney insufficiency not only reflect very completely the texture of current thought on these important subjects, but are also suggestive of the trend of medical theory on the part of those who are investigating them experimentally. In the Surgical Section the reports are at least of as great interest. The present-day surgery of the liver and pancreas, the question of the treatment of fractures of the vertebræ, the discussion of the radical cure of hernia, the injection of cocaine into the spinal cord, and the surgery of the spleen, were all treated as great living topics.

In the Medical Section it was a most curious feature to find that many of the prominent specialists on stomach diseases now suggest consultation with a surgeon when gastric symptoms prove obstinate to treatment. Gastroenterostomy is suggested as a simple procedure, almost without danger and practically sure to relieve the symptoms of intractable ulcer of the stomach, of benignant pyloric stenosis, or of contractions of the stomach due to old ulcers.

In the Surgical Section and in the Sections on Gynecology, Neurology, Dermatology and Children's Diseases, American medical men were listened to with an attention that shows that the impress of American medicine is making itself felt. Dr. Jacobi's address at the second general session of the Congress was the *pièce de résistance* of all of the general sessions, and was received with an enthusiastic attention that quite gratified American hearers gathered within the

classic walls of the Sorbonne. Dr. Jacobi's prophecy that the time is rapidly approaching when American medical science will lead the world seems to have sent the first gleams of its realization in his own much-applauded address.

DIABETES IN AMERICA.

Until recently, statistics apparently showed that diabetes mellitus was much rarer in this country than in Europe. Of late years, however, the number of diabetic cases, especially in American cities, has constantly increased to a very marked degree. Old practitioners have inclined to the opinion that this increase of reported cases is due to a genuine increase of the disease. They consider that the stress of the struggle for life and success in these latter days, combined with the better living of our generation, brings on oftener than in years gone by the disturbances of the nervous system which so often underlie diabetes.

At the last meeting of the American Medical Association two communications were of special interest in this regard. Dr. Herrick of Chicago expressed himself as confident that many cases of diabetes remain absolutely unrecognized because of faulty diagnostic technic. Dr. Heinrich Stern of New York presented the fact that during the last ten years, while the general death-rate of New York has decreased about one-third, the mortality from diabetes has more than doubled. The increased fatality from the disease has not come especially among the wealthier classes, but has affected about equally all strata of the population. There is not the slightest reason for thinking that this remarkable increase in the reported cases of diabetes is due to an actual increase in the number of cases of the disease. Needless to say no change has come in the habits of life of New Yorkers within ten years that might account for the greater incidence of a pathological glycosuria. The approximation of the death-rate from the disease to that which occurs from the affection in European cities is only an index of greater skill in diagnosis and of greater care in the examination of patients.

Diabetes is often overlooked even in advanced cases. Two diseases particularly are set down as causing deaths which are primarily due to diabetes; one is pulmonary tuberculosis, the other Bright's disease. The presence of sugar in the blood of patients suffering from diabetes makes their tissues very favorable culture media for the growth of the tubercle bacillus. When sugar is added to blood serum in a test-tube tubercle bacilli grow much more rapidly and more luxuriantly than on simple serum. Diabetic patients are extremely prone to tuberculosis. To permit sufferers from the disease to remain where they are liable to contact with tuberculosis patients is to invite a tubercular infection. By far the greater number of diabetics die of tuberculosis in some form. Here is where the source of diagnostic error lies. The physical signs in the lungs seem an all-sufficient cause for all the patient's symptoms. The urine is not examined; the glycosuria is never detected. Needless to say the ordinary dietetic treatment of tuberculosis serves only to make the diabetes worse and a fatal termination becomes inevitable. These constitute many of the cases that are considered to be *phthisis florida*, or the so-called consumption without tendency to recovery.

As to Bright's disease and diabetes the confusion comes from the finding of casts and albumin in the urine. In advanced stages of diabetes these will always be found. If sugar is not looked for, and it often is not, especially when the specific gravity of the urine is not high, as is not infrequent, then the true indications for treatment will be overlooked entirely. Both these possible sources of error in diagnosis emphasize the necessity for more frequent and careful examinations of the urine than are made at present Undoubtedly our present statistics of diabetes in America show less than the real death-rate from the disease, because diabetes frequently masquerades to a fatal termination under the unsuspicious semblance, as we have said, of tuberculosis or Bright's disease.

UNREASONING FEAR AND ITS PHYSICAL BASIS.

Emotionalism has its foundation not in any perversion or defect of the moral nature, but in the physical constitution. This is a fact that has gained recognition only during recent years. The various phobias, unreasoning fears, are now an accepted part of the symptomatology of certain nervous and mental diseases. The man who hesitates before daring to cross an open square is not the victim of a cowardly timidity, but is suffering from a nervous condition which causes his visual reflexes, when acted on only by distant objects, to disturb not only his mental but his physical equilibrium; tremor and a halting gait assert themselves. The mechanism of coordination in walking is a delicate one, but in the normal individual practice has banished effort in

its accomplishment. In highly neurotic organisms, however, when nervous reflexes have become exaggerated because inhibition is lowered by constitutional weakness, the faculty to coordinate may require an extremely difficult and conscious effort. This intense effort reacts upon the nervous system somewhat as the walking on a narrow path at a great height does on one unused to it, with a resultant fear that disturbs mental and physical balance.

In the fear of wide, open places, agarophobia, "dread of the market place" as it has been learnedly called, we have an exaggerated condition of unreasoning fear, examples of which in less degree are familiar in life. The realizations of the physical basis of these emotions, their treatment by the improvement of the patient's general condition and the reassurance of patient and friends that they are the result of physical rather than mental defects are often of the greatest benefit. Not only this but properly directed training may result in ameliorating very much the physical condition that accompanies and is often directly causative of these mental states. For example, an unreasoning fear of darkness is a very common failing. Much of it is due to the fact that children are put to bed with a light burning and go to sleep before it is put out. They have never become accustomed to the reflexes that are aroused by persisting darkness. The question of training in this matter is important. Not a little nervous perturbation is saved in after-life by accustoming children when they retire even in very early years to total darkness. Besides this in times of accident involving darkness, as is so often the case, those accustomed to absence of light are not handicapped by a paralyzing nervous fear that makes rational action and presence of mind practically impossible.

Another very familiar form of unreasoning fear is seen frequently at the present season of the year. It is the dread of lightning so common among neurotic individuals. For very nervous women, particularly, a severe thunderstorm is a most trying experience. The physical depression consequent on the nervous excitement is often distinctly noticeable even hours afterward. For neurotic patients improving in their general condition, a storm often means an unfortunate setback in the progress of amelioration. Here the physical basis of the unreasoning fear is not hard to see. It cannot be modified by reasoning nor even by the assurance of the minimum of danger to life that lightning involves. Training in mental control will, however, do much to ameliorate the nervous dread aroused by the sight of lightning and the sound of thunder. If practised at first when electric disturbances are distant and slight it will finally bring patients to a comparative ease of mind. To point out that the condition really has a physical basis in lack of nervous tone is of itself a very helpful factor in lessening the irrational dread.

In a word, the unreasoning fears that disturb many a life may be greatly lessened by constitutional treatment that benefits their general condition and by therapeutic methods directed to the special physical basis of the symptoms. It is the duty of the physician quite as much to remove the lesser evils that interfere with the fulness of healthy life as to treat the serious ills that threaten existence. How much the physical condition influences even the passing modifications of the mental state it has been reserved for our generation to realize.

ECHOES AND NEWS.

NEW YORK.

Hydrophobia Victims.—The death of Mrs. Strathie at Atlantic Highlands, N. J., August 19th, from hydrophobia resulting from a slight scratch inflicted by the teeth of a pet bull-terrier, recalls the fact that her son died from the same cause about a month previously. Pasteur treatment was administered to the mother, but without avail. Seven other persons bitten by the same dog are being anxiously watched.

Advance in Price of Milk.—The long continuance of the hot weather, drying up pastures and increasing the cost of feeding cows, has led the milk producers to insist upon an increase of the price paid them from two and three-quarters to three cents a quart. The Consolidated Milk Exchange has granted the demands of the dairymen and farmers, increasing by a quarter of a cent the price paid to the producers for milk, and this amount has been added to the wholesale price in this city, which is now $1.60 a can (forty quarts) instead of $1.50. In consequence it is expected that the minimum retail price will be increased from five to six cents a quart. This increase, although seemingly slight, is of vast importance to the denizens of the tenement-house districts where the future voters reside.

The Kneipp Cure.—A man with feet swollen twice their normal size was recently brought to Bellevue in a cab for treatment. He said he had read much of the merits of the Kneipp cure, and thought he would try it on his corns and bunions. He rose at daylight every morning for two weeks and roamed barefoot through the woods

near his home. He said he had about cured his corns, but one day his feet began to swell and he tried various remedies without obtaining relief. The doctors found that the man had a bad case of ivy-poisoning. He will be laid up for several days.

New York's Lodging Houses.—The rigid enforcement of sanitary rules by the Board of Health has robbed these places of their terrors as breeding-places of disease. Chief Inspector Jonas of Chicago has recently made a careful inspection of these institutions with the result that the system of regulations in vogue here will doubtless be adopted in Chicago.

The New Régime at Elmira.—Risking the chance of being shot down in their flight for liberty, three first-grade men, all "trusties," who would soon have had their parole, took French leave from the New York State Reformatory August 17th. The men were working on the large lawn in front of the institution. A guard was with them. He had allowed the men to get some little distance away, when suddenly they began to run for the woods. All three escaped, and searching parties are now seeking for them.

Dr. Booth Killed.—Dr. Franklin Booth, one of the inspectors employed in the Health Department and who was detailed to duty in the Borough of Queens, had both legs cut off by a trolley car August 18th. In getting off a car he was struck by a trolley coming in the opposite direction, was knocked down and the car wheels passed over his legs. With great presence of mind he asked that he should be carried to the sidewalk and an ambulance summoned. In the meantime he directed the application of cords as tourniquets to his legs to prevent hemorrhage, and upon the arrival of the ambulance surgeon suggested that it would be well to amputate the left leg, which was done on the sidewalk. Upon arriving at the hospital further surgical procedures were required upon the right leg. Dr. Booth seemed to rally from the shock, but his sixty-three years were against him and he gradually sank and died. At the time of his death Dr. Booth was a member of the Queens County Medical Society; he was graduated from Bellevue in 1864.

Contagious Diseases.—For the week ending August 18, 1900: Measles, 51 cases and 6 deaths; diphtheria, 172 cases and 33 deaths; laryngeal diphtheria (croup), 3 cases; scarlet fever, 47 cases and 2 deaths; smallpox, 1 case; chicken-pox, 5 cases; tuberculosis, 181 cases and 154 deaths; typhoid fever, 50 cases and 12 deaths; cerebrospinal meningitis, 6 deaths; totals, 510 cases and 213 deaths.

Disposal of Garbage.—The Street Cleaning Department has not solved the problem of disposing of the city refuse. By putting a stop to the dumping of garbage in the ocean off Rockaway Beach the Commissioner won the gratitude of the frequenters of the seaside resorts, but he fell into a hornet's nest when he established a dumping-ground at East Fifty-third Street. After the process had continued for three or four days the residents of the neighborhood were righteously wrathful and appealed to the Board of Health to have the proceeding stopped, denouncing it as a menace to the public health. The Board responded promptly and not only ordered the continuance of the dumping stopped, but peremptorily demanded that the refuse already deposited should be removed. These orders were promptly executed, the refuse being dumped into scows, the destination of which remains a mystery. Until cremation plants can be established the Street Cleaning Department seems to be literally between the devil and the deep sea.

PHILADELPHIA.

Action Against Milkmen.—The Board of Health has authorized criminal proceedings against a milkdealer for selling milk containing a preservative. Action is also to be taken against an alleged seller of watered milk.

Park Sanatorium.—The management of one of the newspapers of the city has secured permission of the Park authorities to establish a sanatorium in one of the old mansions in Fairmount Park. It is intended to be a home for anemic young girls during the summer months.

Pennsylvania Hospital.—The 149th annual report shows that 35,195 patients were treated during the last year. There were 1401 ambulance calls answered and 1676 patrol cases cared for. The income exceeded the expenditures by $99,-055.35.

Milk and Ice Society.—This Society furnished during the past week 2700 quarts of sterilized milk and 60 tons of ice. Milk is sold at 5 cents a quart and ice at the rate of 4 pounds for one cent. The poor people benefited are not made to feel that they are objects of charity.

Health Report.—Deaths in the city for the week ending August 18th were 550, an increase of 98 as compared with those of last week and of 160 over the corresponding week of last year. There were 42 deaths from cholera infantum and 51 from sunstroke. There were 31 deaths of people over eighty years of age. Contagious diseases: Diphtheria, 64 cases, 10 deaths; scarlet fever, 22 cases, 1 death; typhoid fever, 77 cases, 8 deaths.

CHICAGO.

Births.—During the week 611 births were reported, 319 males and 292 females.

Contagious Diseases.—In the contagious disease division, 16 cases of scarlet fever and 15 of diphtheria were reported.

Meat.—At the stockyards 26,170 pounds of meat were condemned during the past week.

Milk.—Specimens of milk numbering 112 were brought to the Laboratory, 5.92 per cent. of which were found to be below grade.

Mortality Statistics.—The mortality for the week ended August 11th, as given by the weekly Bulletin of Health, was 577, or 93 more than the preceding week, and 87 more than the corresponding week of 1899. The annual death-rate per thousand was 17.18. Of the 577 deaths 309 were of males and 268 of females; 190 were under one year, 85 were between one and five, and 94 over sixty years. The principal causes of death were: Acute intestinal diseases, 172; consumption, 56; nervous diseases, 47; heart diseases, 29; cancer, 24; violence, 22; Bright's disease, 18; pneumonia, 18; sunstroke, 14; suicide, 9; typhoid fever, 9; apoplexy, 8.

GENERAL.

The Famine in India.—August 20th, the Viceroy, Lord Curzon, telegraphed that the heavy, general rainfall has continued in most of the affected tracts. The crops promise well in the central provinces, sowing is active and the necessity for free kitchens will shortly disappear. Prices, however, are still very high everywhere. Cholera is prevalent throughout Hyderabad and in Bombay. There are 5,688,000 people receiving relief.

St. Louis' New City Hospital.—The City Council and House of Delegates have passed the bill which makes $300,000 available for this purpose. The Mayor has given the bill his sanction, so the work will begin at once on the site of the old hospital which was destroyed by the cyclone of 1897. A one-million-dollar hospital building is contemplated, with furnishings and appliances fully in keeping with modern medical, surgical and hygienic conditions. As the institution will be built upon the pavilion plan, a fairly large structure can be erected with the funds at hand, and additions may be made from time to time, as the necessity arises and as the appropriation permits.

Cottonseed Oil Preferred to Olive.—The United States Consul at Marseilles reports that pure olive oil for edible purposes is at present practically unknown in any important market, and if it were offered for sale it is doubtful whether it would be accepted by the public, except as an inferior article, as the average consumer at the present time prefers the neutralized taste of a mixture of the olive and vegetable oils, and would mistake the fruity flavor of the pure juice of the olive for an adulterated product. It is doubtful if olive oil will ever recover its old-time place, as many vegetable oils, notably American cottonseed oil, are being produced in increased quantities from year to year and are gaining in the estimation of the public.

Obituary.—Sir William Stokes, Surgeon in Ordinary to the Queen in Ireland and Consulting Surgeon to the British Forces in South Africa, died August 10th. Sir William Stokes was born in Dublin on March 10, 1839. He was the second son of William Stokes, M.D., Regius Professor of Medicine in the University of Dublin and Physician in Ordinary to the Queen in Ireland. Sir William was educated at the University of Dublin. He was President of the Pathological Society in 1881, President of the Royal College of Surgeons in 1887, and Honorary President of the International Medical Congresses at Berlin in 1890, Rome in 1894, Moscow, 1897, and Paris, 1900. He was the author of several publications, one of them being the "Life and Work of William Stokes." He also sent numerous contributions to medical journals. —Sir Henry Simpson, Veterinary Surgeon to the Queen and former President of the Royal College of Veterinary Surgeons, was found August 17th drowned at Datchet, Buckinghamshire, where he owned an extensive estate. He was born in 1842. Sir Henry Lunnon Simpson was Mayor of Windsor in 1887, the jubilee year of Queen Victoria's accession to the throne, and received a knighthood for his official services in the royal borough during that year.

Revitalizing Vitiated Air.—Two French chemists, MM. Desgrez and Balthazard, announce that they have discovered a process of indefinitely renewing the vital properties of air. Binoxide or peroxide of sodium is used and the discoverers assert that in the process of decomposition, presumably at normal temperatures, it gives off oxgen and at the same time absorbs the carbonic acid produced by human breath and the burning of gas.

The Bubonic Plague.—Three new cases of the disease were reported as occurring at Rio de Janeiro August 16th, and three deaths. The record of the plague at Manila for the two weeks ending July 7th, as reported August 20th to the Marine Hospital Service, is seven new cases and five deaths. Of the new cases, four were Filipinos and three Chinese. Six to eight deaths is the present daily record at Bombay. At Calcutta there is a marked and steady diminution in the number of cases reported and in the mortality. Aden on July 10th was officially declared free from plague.

Yellow Fever.—Tampa was officially declared free from yellow fever August 11th and all quarantine restrictions on travel to and from that port were removed. Since then the neighboring States have raised all quarantine against Tampa. At Vera Cruz during the week ending August 4th 19 cases and 6 deaths were reported. In Yucatan the fever is reported as "on the increase" and very virulent. At the ports of Colombia all steamships are leaving with clean bills of health. At Havana during the week ending August 6th there were 7 deaths from the fever.

Sickness at Nome.—The situation is greatly improved. August 6th Lieut. Jarvis, of the Revenue Cutter Service, reported that there were no

cases of typhoid fever, 12 cases of measles, 18 cases of pneumonia and 6 cases of smallpox.

Enteric Fever in the British Army.—Mr. Wyndham announces that there were at Bloemfontein for the week ending June 8th 487 admissions and 98 deaths from enteric fever. For the week ending June 15th 213 admissions and 64 deaths, and for the week ending June 22d 221 admissions and 52 deaths. At Kroonstadt there were for the week ending May 25th 6 admissions; for the week ending June 1st 83 admissions and 12 deaths; for the week ending June 8th 18 admissions and 18 deaths; and for the week ending June 15th 66 admissions and 11 deaths.

Meager Food and Health.—Ex-Judge William Cole Talcot, of Valparaiso, Ind., has lived for several years with his wife at a total expense for food of not more than $1 a week, or $52 for the year. Both are in the best of health. They declare that they never felt better nor could work better in their lives and believe that they have solved the problem of happiness and health in resorting to the plainest of plain living. Their meals consist chiefly of cereal products, with milk and sugar. They eat generally for breakfast oatmeal mush, with milk and sugar. For dinner they have bread and milk and sugar, and for supper cornmeal mush and sugar. They vary this slightly from time to time with other cereal foods, and when they feel a taste for it add a bit of meat, for neither is a strict vegetarian. The weekly expense bill for the two is as follows: Fourteen pounds of flour, graham and white, 56 cents; eight pounds of corn and oatmeal, 10 cents; four pounds of sugar, 28 cents; total, $94 cents. Salt and an occasional piece of meat brings this weekly average nearly to $1.

Poppy Cultivation in India.—The Secretary of State for India reports that the area of poppy cultivation in India has increased between the years 1890 and 1897, as stated by the Bengal opium department, from 770,000 bighas to 890,000 bighas (a bigha averages about three-quarters of an acre). In 1898 the area was considerably below that of 1897. The Secretary of State further states that the cultivators are perfectly free to sow food or other crops, and that he is unwilling to interfere with the rules and regulations of the system, which has worked well and which gives full weight to the importance of controlling the traffic in opium and keeping it within bounds.

Tetanus in Jute.—The Chief Inspector of Factories of Great Britain reports that during the ten years of 1890-1899, inclusive, 11 fatal cases of tetanus occurred at Dundee, 5 of which occurred in workers in jute-mills and 3 were the children of workers in the yarn-mills. The last victim was a female worker in the jute-mill who six days after a crushed and lacerated wound of the foot developed tetanus and died within twenty-four hours. Some of the dust taken from under the machine in which the foot was crushed was found to contain an unusually large number of tetanus bacilli. The *British Medical Journal* remarks that this circumstance rather suggests that between jute and tetanus there exists a similar relation to that between wool-sorting and anthrax. The source of the jute used is India.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, August 10, 1900

THE SOUTH AFRICAN HOSPITAL COMMISSION—INADEQUATE RESERVE HOSPITAL EQUIPMENT—EFFETE PREJUDICES OF THE MILITARY AUTHORITIES IN DEALING WITH THE MEDICAL DEPARTMENT—WANT OF INDEPENDENT TRANSPORT—CENTENARY OF THE COLLEGE OF SURGEONS—HISTORY OF THE COLLEGE—EXHIBITION OF RELICS—QUARREL BETWEEN THE BOARD AND STAFF OF THE NATIONAL HOSPITAL FOR THE PARALYZED AND EPILEPTIC.

The Commission appointed by the Government to inquire into the South African Hospital Management began its work in London under the presidency of Judge Romer. It consists of five members—two medical and three lay. Under pressure in the House of Commons Mr. Balfour was forced to increase the number of lay members from one to three, so that the medical profession, which was thought to be incriminated, should not have a preponderating voice. In opening the Commission the President said that no special or compulsory powers had been conferred, but they hoped and believed that such were unnecessary. All Government officials were freed from their obligation of keeping secret information obtained in their official capacity. There might be witnesses, official or otherwise, who might be deterred by personal reasons from giving evidence for fear of the consequences. The Commissioners had determined that by taking their evidence in strict privacy and by not allowing their names to appear they should receive the benefit of such evidence. They believed that they would be able to obtain all the evidence necessary to enable them to report on their commission, but if they found themselves hampered in obtaining evidence which they believed was being withheld they would report the matter to the Prime Minister and apply for his assistance. General Sir H. Brackenbury, Director-General of Ordnance, stated that he was charged with supplying all arms and armaments for the war together with hospital equipment. He could not say that there had not been occasional delay in complying with requisitions wired from the front, but such were due to dependence for the execution of contracts or orders on different trades, which were

not equal to the emergency. The reserve of hospital equipment previous to the war was totally inadequate. A great lesson had been learned—the necessity of a very large reserve, so as to be able to meet all the demands during the first six months of a campaign and not to be dependent on the trades. Just previous to the war there was only one base hospital of 520 beds and two stationary hospitals of 110 beds each. As showing how his department was tested he mentioned that about a month ago a demand was received from the front for 5000 beds, and while the order was being complied with a telegram was received to send out no more. The next witness, Sir Ralph Knox, Permanent Under-Secretary for War, gave a startling piece of evidence which throws a strong side light on the whole scandal and illustrates the effete caste prejudices and belated conservatism which dominate that citadel of British toryism, the War Office. The Army Medical Department has no executive authority. According to what is required in the field, it has to go to one of the four high military officers of the War Office, the Adjutant-General, Quartermaster-General, Inspector-General of Fortifications, or the Director-General of Ordnance, and while speaking generally all its applications are granted they are usually referred to the Army Board! This illustrates the persistent snubbing of the Medical Department which permeates the administration of the War Office. Another example of this noxious policy is found in the question of transport. Mr Watson Cheyne, one of the consulting civil surgeons in the campaign, pointed out that many defects in the Army Medical Service in the field depend on one great point, namely, that the Army Medical Department is not provided with its own independent transport. Application must be made for wagons and animals in all cases when any movement is to take place. The result is that frequently such transport is not available, or, if available, can only be supplied to a limited extent. The field hospital which did the greatest amount of good was the New South Wales Ambulance which came provided with its own transport and formed a unit absolutely independent of the Army. It appears that the Army Medical Department has for sometime being making representations to the military authorities on the necessity of independent transport, with the usual result.

The centenary of the Royal College of Surgeons was signalized by the presentation of diplomas of honorary Fellowship in the theater of the University of London. The President, Sir William MacCormac, delivered an address of welcome in which he said: One hundred years have passed since the charter granted by King George III. incorporated the surgeons of England into a Royal College whereby the art of surgery might be better cultivated. The progress of surgery has been greater during the present century, more specially in the latter part of it, than in all the preceding ones. All new discoveries are but a product of the past. Absolute originality does not exist. The discovery of anesthesia was guided by previous trials, half successes, half failures. The antiseptic system, for which all the world does homage to Lord Lister and which crowns him with imperishable laurels, is based on the researches of Pasteur. In the old textbooks again and again something may be found near to what is the accepted doctrine of the present time. Hippocrates classified injuries of the skull much in the same way as we do now. A close connection has existed between the surgeons and the City of London. The City first recognized the difference between barbers and surgeons in the fifteenth century. In 1423 a college of physicians and surgeons, which had been founded chiefly through the influence of John Morstede, a surgeon who accompanied Henry V. to Agincourt, was formally sanctioned by the Lord Mayor and powers were granted to it to examine and control persons practising medicine and surgery. The Livery Company of Barber Surgeons was founded in 1540 and its hall in Monkswell Street is still standing. The Act of Parliament separating the surgeons from the barbers became law in 1745, and a corporation was established. The surgeons established themselves in the Old Bailey where they built a theater and dissected the bodies of criminals after execution. In 1753 Percivall Pott and John Hunter were chosen as the first masters in anatomy, and no more brilliant choice could have been made. In 1796 the surgeons emigrated to Lincoln's Inn Fields. A large number of interesting portraits and relics were on view at the College—a pencil drawing of John Hunter by Sir N. D. Holland, said to be even a better likeness than Reynold's painting; surgical instruments belonging to Hunter, his clock case of lancets, etc.; a silver box used by Jenner in vaccination, etc.

The difficulties which have existed for the last ten years in the management of the National Hospital for the Paralyzed and Epileptic, owing to the refusal to allow the medical staff representation on the Board, have reached a climax. Matters have arrived at such a point that no reconciliation could be hoped for between the views of the present board and the staff. This brilliant staff, composed almost entirely of men of world-wide fame, such as Hughlings Jackson, Buzzard, Gowers, Ferrier, Bastian, and Risien Russell, who have done much in the creation of the science of neurology, has been compelled to address a protest to the *Times* asking for a full and searching inquiry into the constitution and management of the hospital. Some two months ago the staff addressed a memorial to the governors declaring that the administration of the hospital was very unsatisfactory. The diet is insufficient, the care and treatment of patients are defective, the nursing is inadequate. The grounds given for refusing the staff a voice in the management of the hospital are that such a course would be an encroachment calculated to destroy the religious

and philanthropic character of the hospitals and to subordinate to purely professional objects institutions maintained by the benevolent for benevolent purposes. Here is another example of the evils of allowing the control of a hospital to rest purely in lay hands. The narrow-minded view that a conflict between religion and science is involved in the very reasonable and really philanthropic demand of the staff calls for no comment.

SOCIETY PROCEEDINGS.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

Held at Paris, August 2-9, 1900.

(Continued from page 234.)

SECOND GENERAL SESSION.

The second general session was held in the amphitheater of the Sorbonne on Monday, August 6th, with the President of the Congress, M. Lannelongue, in the Chair.

The first paper read was that of Prof. Pavlov of the Imperial Institute of Experimental Sciences of St. Petersburg. He said: The best illustration of what experimental medicine has done for medicine is the history of the study of the vagus nerve. Section of the vagi produces death and this was at first attributed to nervous influences upon the heart. Later it was found that if the vagi were cut at different times animals could be kept alive for some time even with both vagi completely sectioned. Then it was found that death seemed to take place because of paralysis of the larynx and the consequent passage of food into the lungs. Prof. Pavlov showed that the larynx and lungs could be protected from such accidents yet death take place. The cause of death was always an acute indigestion due to the trophic influence on the stomach of the section of both nerves. Dogs can be kept alive for months, however, by feeding them absolutely bland and unirritating food through a gastric fistula. The study of this subject shows what can be accomplished by persistent experimentation.

Not only in the matter of gastric but especially in intestinal digestion has experiment done much to widen the horizon of physiology. The changes that take place in food and in drugs before their ultimate absorption are becoming clearer. We have learned that the problems involved in digestion are by no means so simple as we all thought them, but the light is becoming ever clearer and we know now that they are surely not insoluble. Besides this experiment has taught us much as to the use of new drugs. It can be objected that we may never be sure that drugs will act on man as on animals, but the wider study of biology is leading us to know where to look for exceptions. Precious hints are being gained by experimentation, however, and our armamentarium for the treatment of human diseases is being constantly added to. It is to be hoped that the new century will see a still wider extension of the practice of experimental therapeutics in the hands of accurate and competent observers.

Problems in Modern Medicine.—Prof. Burdon Sanderson then discussed the problems that are at present occupying medical minds, especially in pathology and physiology. He reviewed the development of cellular pathology and paid a tribute to Virchow and experimental medicine with a warm eulogium of his old master, Claude Bernard. After Virchow's ground-breaking work the most important discovery for pathology and physiology was his pupil Recklinghausen's observation that the white blood-cell was not a mere disk of living material afloat in the blood-stream, but a living organism consisting of but a single cell but containing a nucleus and enjoying at least a quasi independent existence. Then came the discovery of Cohnheim, another pupil of Virchow, that the white blood-cells become in pathologic conditions the pus cells. Since then purely biologic ideas have entered more and more into physiology. When it became clear that fermentation was due to living cells, the anology of this process with many things that occur in the living body made it probable that its explanation would throw light on physiological problems.

The original claim that fermentation is actually due to the vital processes within the cell has gradually been proved to be unfounded. Chemistry is again asserting her sway in physiology. Buchner has recently shown that a substance can be expressed from the cells of ferments which will produce fermentation without the necessity for the presence of the living cells. Many oxidation processes within the body are probably accomplished in the same way as fermentation and are therefore the result of a secretion of living cells and not of the actual vital processes within the cells.

Respiration and Oxidation.—Recently the experimental botanists have been able to reproduce all the phenomena of plant respiration *in vitro*. These processes then revert to the chemist once more for explanation. Oxidation processes are, however, often inexplicable. Even the process by which hydroquinone accomplishes oxidation is not yet fully understood. The study of respiration has not added much to our knowledge of the red blood-cells, yet some advance has been made. We know that the red cells of one animal will not live in the blood of another. Recently we have learned that the power in the blood serum which causes the death of the red cells is the same that acts upon microbes, which it must be remembered are also cellular in character. The power that gives immunity to disease serves also to kill any intruding cells that may find their way into the circulation. In such questions as diabetes the advance may not seem marked, yet there has been a constant progress. We have learned to

realize now that there are three organic elements that enter into the problem of diabetes, *viz.*, the liver, the pancreas, and the muscles. The liver is concerned very probably with the production of sugar and somewhat with its consumption; the pancreas produces some substance that aids in the metabolism of sugar within the organism; and the muscles are the direct agents of the ultimate destruction of sugar.

Kühne the Physiologist.—After Claude Bernard himself, Burdon Sanderson declared the modern medical world owes much to Kühne, his disciple, for light on these difficult problems of cellular physiology. We have lost him within the last few months, but his memory shall live in the eminently suggestive discoveries he has made.

American Medicine.—Prof. Abraham Jacobi then reviewed the course of American medicine from the time when John Smith had to go home to England because there were no doctors in the Colony, down to the present day. He dwelt on the features of our medical education that made it so difficult to have thoroughly-trained medical men, and on the early defects in our laws that discouraged the regular members of the profession and encouraged quackery. He stated that at the time of the American Revolution only one book on medicine had been printed in America and two English books reprinted. Nearly 8000 medical books have been published in America up to the present time and over 300 medical books are issuing from the press every year. Laws have been passed in most of the States for the regulation of medical practice and medical matters are progressing very favorably. Medical education has received a new stimulus in recent years. As the result of the establishment of Johns Hopkins Medical School there has come the realization that medical schools should not only teach but also investigate. Where original research is not constantly carried on medical teaching degenerates and soon becomes out of date.

Medical Abuses.—Dr. Jacobi dwelt on the medical abuses that are such crying evils. The manufacturing chemist and his nostrums, the advertising specialist, the quack and faith-healer, the book-agent who takes valuable time, the drug-agent, who will be heard, and the rest. All of this was said in lighter vein and in a charmingly naive French that quite took with the audience. The abuses he mentioned were evidently not those of America alone, for they were appreciated by our foreign brethren who applauded at various points. When, then, at the end he spoke of the possibilities there are in American medicine and the chances that before the new century is old she will take her place as a teacher of medicine among the nations, an enthusiastic round of applause was evoked and in its midst the session closed.

Prof. Bacelli's paper on "The Treatment of Tetanus by Injections of Carbolic Acid" was not read. Political events require the Professor-Senator's presence in Italy.

THIRD GENERAL SESSION.

The third general session was held Thursday, August 9th, with the President of the Congress, M. Lannelongue, in the Chair.

The Architecture of the Bones.—Prof. Albert of Vienna read a paper on "The Architecture of the Bones of Man and of Animals." He recalled certain well-known facts as to the mechanical arrangement of the bony frame so that it accomplishes intended purposes with the least waste of energy consonant with the conditions under which it works. He dwelt especially on the comparison of the human form in its lifting labors with a crane. He then proceeded to show how, in the construction of such parts of the frame as the ankle, the principle of the arch is used to give strength yet economizes tissue and permits of flexibility. In the long bones of the leg the amount of material necessary to carry the intended load is arranged in such a way as to give grace and lightness yet the proper amount of security.

It was then announced that the next International Congress would be held in 1903 in Madrid. On account of the summer heat, there had already been some discussion as to the advisability of holding the Congress in the spring instead of during the summer, as has been the custom. The ultimate decision of this matter must rest with the Spanish Committee of Arrangements.

The President of the next Congress, selected by the votes of the Spanish representatives now in Paris, is Prof. Julian Calleja Sanchez, Dean of the University of Madrid, Professor of Medicine, President of the Bureau of Health of Madrid, and Senator of the Kingdom of Spain. He has appointed as his Secretary General Prof. Fernandez Caro, of Madrid, who is also a member of the Spanish upper house.

The prize of Moscow, as we announced to our readers, was then conferred on Santiago Ramon y Cajal, Professor of Histology at the University of Madrid.

M. Lannelongue then thanked visitors for their attendance at the Congress and the French Committee for their work in its preparation. Of this the burden fell on the Secretary General and it had been most devotedly carried. Each International Congress becomes more and more laborious for the committee of organization, but the good accomplished in the profession's glorious cause, not in bringing out what is new, but in bringing men and ideas into contact, is ample reward for it all. M. Lannelongue then said, not adieu, but au revoir at Madrid.

SECTION ON INTERNAL MEDICINE.

FIRST DAY—AUGUST 3D.

(Continued from page 275.)

The Treatment of Membranous Colitis.—Dr. Mathieu of Paris said that whether or not the disease was essentially and primarily a neurosis at least it was clear that a neurotic element en-

tered into it and this furnished the principal indication for the treatment of the disease. The nervous condition becomes gradually worse from the continuance of the irritative condition forming the vicious circle so common in neurotic processes. Patients often become distinctly neurasthenic and the general treatment for that condition will have to be resorted to. Even the rest cure, with absolute rest in bed, isolation and an absolute milk diet, may be required. Later the nervous-system symptoms should be treated. The constipation may be overcome by large injections of water, not given cold or at high pressure. Either of these qualities in the injection may increase the irritability and the pain. For the pain belladonna may be given and often affords relief. Codein or morphine may be given, but guardedly. At times, instead of increasing the constipation, they serve to loosen the bowels by relaxing the spasm. For paroxysms of severe pain large injections of warm water and warm baths may be given. In two cases known to Dr. Mathieu an artificial anus was made to relieve the pain. Both patients died. There seemed to be a spasmodic condition of the gut, above the point where the intestinal opening was made.

Membranous Colitis and Appendicitis.—Prof. Dieulafoy said that the differential diagnosis of these two was often very difficult. It was sometimes said that the existence of a chronic appendicitis or of a typhlitis was sometimes the cause of the irritative nervous reflexes that resulted in membranous colitis. Membranous colitis was said to lead to the eventual involvement of the appendix. The coexistence of the two diseases is very rare. Of 500 cases of appendicitis that have been operated on by surgeons at Dieulafoy's request only one had any history of membranous colitis. The two diseases have no connection with each other.

Second Day—August 4th.

Acute Edema of the Lungs.—Dr. Teissier of Lyons said that the subject of pulmonary edema was one of the most difficult and the most disputed in the whole range of modern medicine, not alone from the pathological but also from the clinical side of the questions it involves. A patient in apparently good health may be stricken with sudden acute pulmonary edema and despite every medical effort be dead in a few hours. Three theories have been advanced to explain its origin. First, what may be called the mechanical theory, according to which the edema of the lungs occurs as a result of cardiac insufficiency, the left heart being unable to remove from the lungs the blood sent there by the right heart, causing a congestion with serous exudation. The second theory makes pulmonary edema due to an interference with the vasomotor mechanism of the lung, a paralysis of the blood-vessels in full dilatation. This congestive condition produces the characteristic edema. The third theory is that a toxin present in the circulation causes the edema. It does so either by acting on the walls of the blood-vessels and so making them more permeable for the blood-serum, or interferes with the action of the heart by acting on its ganglia or directly on the muscle fibers, or, finally, by causing some change in the blood itself. As a matter of fact it is not to any of these factors that edema of the lungs is due, but to all three of them. Mere interference with the circulation throughout the rest of the body by which the balance between the left and right would be disturbed does not cause pulmonary edema. If the aorta be pressed upon in animals, even although the pressure is continued for long intervals, pulmonary edema does not occur. If the nervous mechanism of the heart is interfered with by irritation of the cardiac plexuses edema of the lungs will begin as soon as pressure is placed upon the aorta, but it does not invariably occur and is not very marked. If, however, salicylate of methyl be injected into the circulation at the same time that the nerves of the heart are irritated and the aorta pressed upon, then pulmonary edema of a fulminant type will assert itself. The injection of methyl salicylate alone will sometimes occasion edema, although usually not to any marked degree. To produce in animals pulmonary edema as it is seen clinically, there must be interference with the systemic circulation, nervous disturbance of the heart, and the presence of toxic material in the circulation. All these elements are realized in the cases of pulmonary edema that come to autopsy. A certain amount of aortitis is found sometimes very marked in character and this interferes with the elasticity of the aorta and consequently with the systemic circulation. This aortitis, because of the thickening it causes in the walls of the artery at the base of the heart, produces pressure upon the cardiac ganglia at the base of the heart. There are in the circulation the poisons due to renal insufficiency and they supply the toxic element necessary for the production of pulmonary edema. In parenchymatous epithelial nephritis, in which there is as a rule but little renal insufficiency, pulmonary edema occurs very seldom. It must be remembered that it is not because the edema fills up the vesicles of the lungs and so lessens the air space in them that the patient becomes asphyxiated. It has been shown by the insertion of a tube in the trachea of an animal suffering from pulmonary edema that the lung capacity was not increased but decreased. Asphyxia occurs because the lungs lose their resiliency as a result of the presence of the fluid in them and so the air is not circulated in them.

Pulmonary Edema Always Congestive.—Prof. Huchard of Paris said that the name pulmonary edema was not well chosen; at least, it does not completely express the real condition present. Congestion always exists in connection with the edema and plays a large rôle in making the lungs incapable of accomplishing their normal function. Very often when the chest is filled with the fine râles that indicate the presence of the exuded

fluid the percussion note over the chest is perfectly normal. This paradoxical percussion serves of itself to show that it is not merely the mechanical effect of the presence of the fluid that causes the symptoms. Asphyxia does not occur because of water-logging, so to speak, but because the lungs have become rigid and pulmonary ventilation has thus been interfered with. Serous expectoration, although relied upon as a pathognomonic symptom, sometimes fails to make its appearance. In Prof. Huchard's experience aortitis always exists and by its interference with the systemic circulation is an important etiological element in the production of the pulmonary edema.

Danger of the Iodides.—In cases in which threatening symptoms of edema of the lungs occur, all use of the iodides must be carefully avoided thereafter. The tendency to exudation in the air-passages which these drugs occasion is almost sure to make them dangerous remedies for patients with any liability to the occurrence of pulmonary edema.

Toxins Most Important Cause.—Prof. Dieulafoy of Paris said that in his experience the etiological element which is common to all cases of pulmonary edema is nephritis. It occurs in any form of nephritis and often in cases in which there has been no suspicion of the existence of a kidney lesion. It is not unusual to be summoned to a patient suffering from the asphyxia of pulmonary edema at whose bedside will be found the liter or half liter of foamy, serous expectoration so characteristic of the disease. The most careful inquiry may fail to reveal a single preliminary symptom. The patient was about his usual occupation the day before and felt not a whit difference from what he has felt for months before. He went to bed a few hours before the attack feeling quite in his usual health. In these cases bleeding is the best remedy. This of itself shows that the toxic element is of greatest importance, for while the bleeding relieves the circulation its enduring effect is due to the fact that it dilutes the toxins which owing to the renal insufficiency are present. The aortic lesions dwelt on by Teissier and Huchard are often found in cases of pulmonary edema, but their presence is by no means indispensable for the occurrence of the affection. Any one who has seen the autopsies of many cases of edema of the lungs will have seen some cases without any aortic affection.

Grippal Herpes.—Dr. Vidal of Hyeres, France, said that the cause of herpes in infectious diseases is as yet a mystery. In a certain number of cases the specific micro-organism of the disease has been found in the herpetic lesions. This was especially true in regard to grip. It seems probable that such lesions desiccate and that in this way grip germs get into the air. Such lesions are therefore a source of the infectiousness of the disease. It is especially accompanying grippal herpes that pneumonia occurs as a complication and grip pneumonias are spread by this means. Where patients develop herpes the lesions should be protected from desiccation and distribution into the atmosphere by frequent applications of ointments.

The Liver in Anemia.—Dr. Gilbert read the account of some observations on the livers of animals who had been bled freely and frequently before being put to death. In all of them the changes that were noted in the liver were more marked than in any other tissues. Islets of swollen cells were noted frequently. The single cells of these groups were swollen and transparent—the so-called hyaline degeneration. The form of the nucleus and its characteristic staining qualities were retained so that it is doubtful if the cells were actually killed, but they were evidently rendered very ilfy able to perform their normal functions. It is evident then that the liver is an important organ in anemias and that disturbances of its functions should be anticipated.

Malarial Hemoglobinuria.—Dr. Karamitsas of Athens, Greece, discussed the malarial origin of the so-called malarial hemoglobinuria. Prof. Koch of Berlin called into question the connection between this condition and malaria and attributed attacks of the so-called black-water fever of Central Africa to the abuse of quinine. Dr. Karamitsas takes the stand that while quinine may cause hemoglobinuria in susceptible individuals, it is not the cause of the hemoglobinuria that occurs in connection with malaria in tropical countries. The best proof of this is that it occurs only in countries where tropical malaria is prevalent. Koch says that he has seen hemoglobinuria with malarial parasites in the blood, but he has also seen it occur without malarial parasites being present. Karamitsas has never seen it occur without being able to find malarial parasites, although sometimes it has been necessary to look for them rather carefully. A peculiarity of malaria hemoglobinuria is that even in countries where it occurs quite commonly it will be noted in certain epidemics of the disease and not in others. This has frequently been the subject of remark in Athens. The characteristic malarial hemoglobinuric fever is an intermittent tertian, although it does not necessarily take this form. Hemoglobinuria which occurs from quinine is noted about two hours after the administration of the drug. It is never due to cumulation of the quinine in the system, nor to its use for days before the attack. For malarial hemoglobinuria quinine should be employed, otherwise the patient is liable to succumb. It is the one remedy that is of service.

The Liver as the Origin of Urea.—Dr. Friedel Pick of Prague described a case of intermittent bilious fever, in which there were certain observations that seemed to indicate the liver as the source of urea. On the days when the fever existed the amount of urea excreted was only five to six grams; on other days from twenty-five to thirty grams were excreted. Charcot in his book on diseases of the liver advanced this theory of the hepatic origin of urea because of a case of Reg-

nard's in which in the same way the excretion of urea varied with the occurrence of the liver affection. There seems no other good reason to account for the diminution of the urea except this one of the reflex action on the liver.

Treatment of Pneumonia.—Dr. Villard of Marseilles counseled the use of bleeding, injection of normal salt solution, and the use of cold packs in pneumonia. Even in children a certain amount of blood should be abstracted by leeches. In the old the amount of blood taken must depend on the condition and vitality of the patient. In sthenic adults as much as 500 cc. of blood (15 ounces) should be taken. This should be replaced by an equivalent amount of normal salt solution. The abstraction of blood serves to dilute the toxins of the disease. In cases in which dyspnea has been marked or nervous symptoms prominent, the good effect of the venesection will be very noticeable. The weakening effect of the loss of blood is counteracted by the injection of the normal salt solution. The use of the cold pack serves to keep down the temperature, decreases the pain and restlessness, lessens the sense of oppression in the chest, and seems to make respiration easier.

Technic of the Hematokrit.—Dr. Daland of Philadelphia described certain modifications in the use of the hematokrit which made the employment of the instrument more accurate, without requiring any special skill in its use. In the new instrument the blood is made to revolve about 10,000 times a minute. This centrifugation must be kept up for three minutes. Less time than this does not give accurate results, but it is needless to take more time as the separation is complete in three minutes. The hematokritic examination of the blood can be accomplished at the bedside and is best done there.

Repeated Blood Examinations.—Prof. Widal of Paris said that where a number of examinations of the blood have to be made, as in dispensary work, the hematokrit is a useful instrument. It is not as accurate as other methods of ascertaining the number of red cells, but it takes much less time and it gives approximately correct results. Especially where frequent examinations of the same person's blood are to be made, the instrument gives excellent comparative results.

Spleen in Infections.—Prof. Dominicis of Naples said that some claimed that chlorosis was due to an infection of the spleen. In order to test this question he had injected the spleens of young bitches with cultures of various microorganisms. In none of the cases did any systemic symptoms occur. The spleen seems perfectly capable of protecting itself against infectious material. Dr. Vidal said that experiments of this kind on one species of animal could not be made to apply to another. He has injected typhoid bacilli into the spleens of rabbits without results and into the spleens of guinea pigs with typical general symptoms.

Bacteriology of Rheumatism.—Dr. Triboulet of Paris reviewed the recent work on the bacteriology of acute articular rheumatism. So many different microbes have been found in the lesions of rheumatism that he concludes that in all of the cases there was question of the germ causing some complication of rheumatism and not the rheumatism itself. This opinion is confirmed by the fact that many of the germs found are ordinary pus cocci, yet other good observers who examined carefully the joint-fluid of rheumatism failed to find them. While acute articular rheumatism is very probably an infectious disease, none of the germs yet described are concerned in its etiology. Rheumatism seems to give to the organism it attacks a special tendency that makes it liable to various infectious complications. It is these that observers have been studying in their successful bacteriological results. It is to be remembered, moreover, that morphology counts for very little in bacteriology. Microorganisms may grow in pairs, yet be very different from other diplococci in their virulence; or in chains, yet be unlike ordinary streptococci. We have in acute rheumatism, as we know it, a number of clinical entities which must be distinguished from one another before we can proceed with any assurance to study their causes.

Rheumatism an Infection.—Prof. Widal of Paris said that there is now absolutely no room to doubt the infectious nature of rheumatism. Its germ has not, however, as yet been discovered. If the liquid taken from acute rheumatic joints be studied microscopically it will be found that all of the cellular elements in the synovial fluid are polynuclear leucocytes. Now these are the cells that, as is well known, always occur in large numbers at the point of inoculation of infectious material. They are phagocytes, according to Metschnikoff. This proves rheumatism to be an infection, but the most careful study of the fluid and cells fails to show the presence of microbes. Inoculated on all the ordinary media in six cases it failed to give any growths.

Rheumatism Contagious.—Dr. Bouchard of Paris said that rheumatism is a house disease; that it occurs in successive cases in the same house. He knows a village where rheumatism had not occurred for years and where after the importation of a case five other cases developed. At the Trocadero some years ago workmen were engaged in repairs. One day it was noticed that a red fungus covered the walls of the cellar where they were working. Some days later a number of the workmen fell sick with rheumatism. Not long afterward some buildings were being torn down in a suburb of Paris and a similar red fungus was noted on the old walls. Here, too, the workmen suffered from rheumatism and a number of typical cases of the disease developed. On a number of occasions rheumatism has been reported as spreading epidemically in barracks where soldiers were crowded together. This was especially the case where the quarters were damp. Rheumatism is evidently an infec-

tious disease and perhaps its cause is a fungus or mould.

Third Day—August 5th.

Causes of Gout.—Dr. Le Gendre of Paris said that there are many explanations offered for gout. The deposits of urate of soda in the tissues are thought by some to be due to a lack of vascularization of certain parts of the body and the precipitation from the slow blood-current in these parts of substances left in the circulation because of defective excretion by the kidneys. Other writers attribute all the phenomena of gout to nervous influences. Others have advanced the opinion that it is only when uric acid and its salts had undergone certain modifications that it becomes capable of producing gouty pathologic changes and that certain other analogous compounds as, for instance, the alloxuric bodies, could also produce the same effects. All of these theories are, however, open to decided objections on the part of chemists and physiologists and, besides, they fail to explain the periodical occurrence of the attacks and also why the disease is hereditary. Its hereditary character is the most prominent feature of the disease. Besides this its relations with the arthritic diathesis and with such constitutional conditions as diabetes and obesity particularly require explanation.

Gout and Diabetes.—The relation between these two diseases has been established. Diabetes it is generally conceded is the failure on the part of the organism to destroy saccharine material supplied to it. It seems clear, then, that gout is a failure to use the nitrogenous material supplied, that is, a failure to consume albumin. This gives rise to a superabundance of certain salts and acids, oxalic, acetic, lactic, etc. These diminish the solubility of the urates and lead to their deposition. There is also a clinical relation between gout and simple albuminuria and interstitial nephritis. Gout is brought on by some abuse of alimentation or of alcohol that affects every cell in the body, hence the deterioration of the systemic metabolism. Certain of the more delicate tissues, as the kidneys, are more deeply affected than others. The heredity of gout is the transmission to the descendants of the state of the cells of the parent.

The Pathogeny of Gout.—Sir Dyce Duckworth said: (1) That gout as a morbid condition depends on an inherent vice of nutrition, which is manifested by an imperfect metabolism in various organs or parts of the body, presumably in the kidneys, and probably in the liver. (2) That this trophic disorder or inadequacy leads to the formation of uric acid, probably in excess, and to the periodic retention of it in the blood. (3) That histology throws no light upon the intimate nature of this defect which thus relates to cellular potentiality, possibly under neurotrophic influence, and not, so far as we know, to structural alteration. (4) That this textural disability, or a tendency to it, may be primarily acquired, and also transmitted as a fault, thereby inducing from time to time urichemia with gouty manifestations in the descendants. (5) That in most instances, under conditions which provoke it, and in some cases independently of these, attacks of gout may grow up and come to a crisis. Such crises are attended by an alteration in the solubility of the uratic salt in the blood, whereby irritating crystals of bi-urate of sodium are produced, and precipitated in various parts of the body. (6) That a paroxysm of gout, the sites of its occurrence, and its metastases, are determined by nervous influences, probably dominated from a center in the medulla, and that the local attacks alight either in the joints or in tissues which have been weakened or rendered vulnerable by impaired nutrition, owing to past injury or overuse. (7) That this central neurosis is an essential and transmissible feature in the pathogeny of gout, and pertains to the arthritic diathesis generally. (8) That the urichemia of gout is peculiar and unlike that which is induced by other morbid conditions, but that the occurrence of urichemia in the gouty is by itself inadequate to induce attacks of gout. (9) That uratic deposits in any part of the body may be removed in course of time, but are apt to be permanent in the least vascular tissues. (10) That uratic deposits may occur to an enormous extent in gouty persons without the occurrence of any pain or paroxysm. (11) That the clinical features of gout indicate that both *hemic* changes (due to inherent morbid tissue metabolism) and a *neurotrophic disturbance* act as pathogenic factors, and that, consequently, gout is to be regarded as a neurohumoral malady. The neurotic basis of gout is much more important than has been thought. It forms the main element that enters into the heredity of the disease.

Gout Not a Single Entity.—Prof. Teissier of Lyons said that gout as we know it is not a single disease but a number of them, having certain analogies. In some of them it is the urates of the system that are at fault: in others the oxalates; in still others the lactates. The mystery of the pathogeny of the disease is a chemical problem and it remains for the physiological chemists to solve it. Meantime the clinicians can help to the ultimate solution of the question by learning to differentiate accurately the various forms of the disease.

Gout Not a Chemic Problem.—Dr. His of Leipzig said that gout is not a chemic but a biologic problem. We know now that the white blood-cells are capable of destroying and modifying the urates. The nucleinic acid that occurs in the leucocytes is the chemical compound by which these modifications are worked out. In the guinea-pig the white cells are capable of destroying, that is, of modifying, from three to four grams of uric acid in the day. The therapeutics of gout should consist, then, not in an attempt to dissolve the uric acid by adding solvents to the

blood, but the white blood-cells should be stimulated to take up their normal function of modifying the uric acid and urates that occur in the system.

Gout a Physical Problem.—Dr. Brocciardo of Naples said that there is probably a physical element in gout as well as a chemical one. Crystals in solutions according to a well-known physical law gather always around a nucleus. The urates of soda that occur in deposits in the joints found there a nucleus already formed. This comes very probably from the hereditary element in the disease.

Rheumatic Gout.—Dr. Thomas Hammond of Washington said that rheumatic gout is not a neurosis as is often claimed, but is a digestive disturbance. Its immediate cause is an abnormal acetic fermentation. It can be cured, absolutely cured, by a lean meat diet. Fats, starches, and sugars lead to the acetic fermentation; they must be absolutely avoided.

Fourth Day—August 6th.

Renal Insufficiency.—About the middle of the century the only method of diagnosing kidney insufficiency was that of clinical observation of the symptoms of beginning uremia, the occurrence of dropsy, the *bruit de galop* of the heart, and the finding of albumin and casts in the urine. These symptoms sufficed for that earlier stage of medical practice and thanks to the careful observation of the great clinicians enabled them to study kidney diseases very thoroughly. The method was crude, however, and scarcely told more than the actual existence of kidney trouble. It did not tell how much the kidney function was disturbed nor what work might still be expected of it. In recent years the attempt has been made to decide how much the kidney function has suffered.

Recent Methods.—The estimation of the toxicity of the urine, it was hoped, would give important information. The method of injecting into animals, however, in order to decide this has been found to have so many modifying circumstances that its accuracy must be doubted. More recently still cryoscopy of the urine has received attention. This process consists in finding the point at which the urine freezes and so deciding as to the presence or absence of certain organic constituents of the urine that markedly affect its freezing-point. The permeability of the kidneys has been studied by means of methylene blue. In the healthy kidney within half an hour to two hours after its ingestion the methylene blue appears in the urine. In kidneys affected by interstitial nephritis the blue color does not appear often for twenty-four hours. In the healthy all of the drug will be eliminated by the third day at least. In those with sclerotic kidneys the elimination continues for two days longer. Phloridzin has been used in this same way. Its injection produces sugar in the urine and the amount of sugar excreted represents the permeability of the kidneys.

Treatment of Nephritis.—Dr. Laache of Christiana said that we have advanced very little in the treatment of nephritis. We have learned to have more confidence in Nature, however, and our prognosis is not as hopeless as it was. We have found that the cyclical albuminuria of the developmental period may disappear completely with the full development of the organism. We know, too, that, especially in the young, one kidney may hypertrophy so as to compensate for another, and we look with more confidence for a certain natural repair of kidney lesions. All of us have seen under the microscope new-formed kidney tissue that made clear the natural powers of reparation. We have learned in recent years that hydrotherapy, especially because of its encouragement of skin function, is one of the most effective and most promising therapeutic agents that we have. The lesson that must be learned in chronic kidney disease is that the heart must be supported. It is when the circulation begins to flag under the strain of granular kidneys that symptoms of renal intoxication show themselves.

Diagnosis of Separate Kidneys.—Dr. Richter of Berlin said that he had found the method of finding the freezing-point of the urine a very valuable diagnostic method, but still incapable of solving all the questions that come for diagnosis. Recently with Dr. Casper of Berlin he has used the method of phloridzin injections in conjunction with ureteral catheterization. By this means it has been found that a healthy kidney excretes sugar, while an unhealthy kidney does not.

Mysteries of Urinary Secretion.—Widal of Paris said that methylene blue passes in acute nephritis, but is retarted in interstitial nephritis. At times, as in a recent case of syphilitic kidney, although the methylene blue passes easily, symptoms of uremia assert themselves. Other substances may not get through the kidney and so intoxications occur.

Ureine the Toxin of the Urine.—The Secretary read a paper by Dr. Wm. Moore of New York in which he described a recent substance that he has found in the urine. It is obtained by a complicated process of which treatment with alcohol is one of the important steps. The new substance called ureine is of a fatty nature and leaves a spot resembling a grease-spot on filter paper. It is slightly alkaline, almost neutral in reaction. When burned only pure carbon remains. This seems to be the substance which produces the symptoms of uremia when renal inadequacy permits of its accumulation in the system. Injected into the animals this substance produces gradually-increasing coma and finally death in the midst of convulsions which resemble those of uremia.

Nephrotherapy for Nephritis.—Dr. Tarruela of Barcelona described his experience with eight cases of nephritis treated by the administration of renal substance. Four of the cases were interstitial nephritis and were but very little benefited

as far as objective symptoms could be observed, although they claimed to feel better subjectively. One was a case of hematuric nephritis and seemed to be greatly improved. Three were cases of parenchymatous nephritis and they were distinctly benefited. The amount of urine and of urates secreted at once rose and the albumin was diminished. The dropsy was lessened and the work of the heart was accomplished better than before. Tarruela inclines to the opinion that there is some therapeutic good to be expected from renal opotherapy in cases in which the epithelial structures, the secretory substance, alone is affected.

Addison's Disease.—Dr. Emil Sergent and Leon Bernard claim that Addison's disease and suprarenal insufficiency are not interchangeable terms. There are forms of Addison's disease evidently due to the lack of suprarenal secretion in the system yet that never became the typically fatal cases described by Addison. There is also the bronze disease described by Addison, of which black skin is an essential symptom and which is associated with inadequacy of the suprarenal capsules. Suprarenal insufficiency may declare itself in the midst of any acute infectious disease and seems to be due to an invasion of the suprarenals by the infectious material. It may be best compared to an acute hepatitis. Its symptoms are those that are noted in animals after the complete removal of the suprarenals. General weakness and weakness of the pulse came on and many of the unexplained fatal terminations of acute infections are due to this cause.

Section on Surgery.

First Day—August 3d.

(Continued from page 275.)

Anesthesia by Injection of Cocaine Into the Vertebral Canal.—This new method of anesthesia has already been practised a number of times and, although its adherents generally claim that it is free from serious dangers, they advocate it only in selected cases on account of its inconveniences. Severeanu of Bucharest said he had varied the dose from one to four centigrams and had never seen a fatal effect, although alarming symptoms lasting for forty-eight hours frequently occurred. In only two cases did anesthesia fail; in one because the injection failed to get into the vertebral canal; in the other for unknown reasons. The injection usually causes a marked weakness and a feeling of nausea that may go on to vomiting, and these sensations may last two or three days. The most serious effect is a terrific headache. The one objection that he finds most fault with is the fact that the patient is conscious, and usually markedly impressed with the operation. He has done 70 abdominal operations with this anesthesia, and although he never had a fatality he believes it applicable to certain cases only. He found it difficult to combat the alarming symptoms that sometimes occurred, although he had recourse to injections of caffeine, ether, and artificial serum. The technic of the operation of injection is so simple, the speaker declared, that it need scarcely be mentioned. The puncture is made with an ordinary hypodermic syringe with a long needle between the fourth and fifth lumbar vertebræ and a one-per-cent. solution of cocaine hydrochlorate used. Some of the operations were as follows: Radical cure of hydrocele, removal of a bullet from the thigh, abscess of thigh with symptoms of septicemia, tumors of the legs, tubercular abscesses of the thigh, strangulated inguinal hernia, cancer of the penis, tubercular osteo-arthritis of the ankle, and multiple sarcomata.

Tuffier of Paris gave a résumé of 125 cases. The operations were done on the legs, the perineum, the bladder, the rectum, the uterus, and its adnexa, and the intestine. He never exceeded one and a half centigrams of cocaine and always obtained absolute anesthesia. When anesthesia fails it is to be taken for granted that the solution was not good or that it was not injected into the vertebral canal. Accidents are usually due to injection of too large a quantity of the drug. As soon as the cocaine begins to act on the cord 95 per cent. of the patients complain of numbness, of anesthesia rising from the feet to the umbilicus, which may extend to the middle of the thorax. Five to ten minutes are necessary to produce this anesthesia and it lasts from one hour and a half to four hours. During the operation the patient complains of a sensation of weight over the epigastrium, of epigastric distress, of a want of air, and of nausea, which may go on to vomiting if the quantity of cocaine injected is too large. The pulse ranges from 90 to 120. After the anesthesia the patients often recover at once demanding immediately something to eat. The most common after-effect is vomiting, or a chill, or an elevation of temperature from 38°-39.9° C. This temperature rise is short-lived, lasting ten to twenty hours at the most. The only persistent and disagreeable symptom is headache which lasts ordinarily fifteen hours and may last forty-eight hours. Of the 125 cases 5 died. The death of 4 is easily explained apart from the anesthesia; the fifth died with symptoms of asphyxia. Post-mortem this case showed a mitral insufficiency with a marked congestion of both lungs. Cardiac disease is not a contraindication.

Racoviceanu Pitesci of Bucharest deduced his conclusions from 125 cases operated on between the ages of five and seventy-two years. He always makes the injection with the patient seated on a chair. Four times anesthesia failed and he was obliged to administer chloroform; twice sensibility returned before the end of the operation. He claims if this anesthesia is practised several times on the same individual, he acquires a tolerance to the cocaine. In 100 cases 17 stood the anesthesia without a symptom; 80 had light symptoms of intoxication, lasting from twelve hours to five days, and 3 showed symptoms of intoxication that endangered life. The dose em-

ployed was from two to four centigrams, either pure or accompanied by morphine. Kidney disease is a contraindication and in case of cardiac disease or arteriosclerosis the symptoms should be watched.

Vincenzo Nicoletti of Naples spoke on the histopathology of the cord after injections of cocaine. He claimed that no appreciable alteration of the nervous elements could be observed. He believes the anesthesia to be due to circulatory disturbances, and to prove this he made control experiments with ergotin, antipyrin and bichloride of quinine, and produced with them an analgesis somewhat similar to that due to cocaine.

Prevention of Shock and Infection.—Türck of Chicago read a paper with the above title in which he proposed a new method of operating on the intestine for the purpose of preventing the gut from coming in contact with the skin of the abdomen when brought out through the wound. The method consists of spreading rubber cloth over the abdomen and bringing the loop of intestine or stomach to be operated on through a hole or holes in it. Moreover, he believes most surgical shock to be due to infection, usually due to organisms normally present on the skin or in the intestine, and which become virulent only after the vitality of the part is lowered by exposure. As an analogy he quoted the susceptibility of the fowl to anthrax after lowering its temperature. To obviate this in abdominal operations he introduces a rubber bag into the abdomen filled with water at 48° C. He showed also a rubber bag capable of being introduced into the stomach by way of the esophagus, which he uses filled with warm water in cases of profound shock.

Toward the close of the sesion Severeanu of Bucharest demonstrated a new zigzag suture for harelip operations; Michaux a hemostat that automatically places a silver-wire ligature on the vessel it grasps; and Bramson of Copenhagen an apparatus which closes a wound by means of plates.

Second Day—August 4th.

Skiagraphy.—The most important question of the day was that of skiagraphy in relation to fractures and dislocations. It was discussed especially by Professors von Bergmann of Berlin and Maunoury of Chartres. Von Bergmann said that the study of fractures has made in the last ten years important progress in two directions; first, in the operative treatment of certain simple fractures by opening up and putting the fragments in apposition; second, in the pathological anatomy of these lesions on account of the skiagraph. There are without doubt often local causes which prevent apposition of the fractured surfaces, such as the interposition of muscle fibers; and although, unfortunately, it is not possible for the skiagraph to show this condition positively, we can easily surmise it when the image shows the bones to be separated longitudinally. But it is in other cases that the Roentgen rays prove especially useful, particularly in fractures of the articulations or of the small bones; one example will suffice, namely, fracture of the patella. Malgaigne long ago deplored the frequency of these cases in which the fractures never unite and recommended even before the days of antisepsis the application of an instrument that would grasp and hold the fragments together. But these instruments have now given way to incision and suture of the fragments with silver or bronzed aluminum wire. The study of recent fractures of the patella by the aid of the Roentgen rays shows three common accidents that may prevent union: (1) the inequality of the two fragments, the upper one being much larger than the lower, so that they can remain apposed to one another only by means of a suture; (2) the breaking-up of the fragments, when the smaller slip in between the larger; (3) one of the fragments may be displaced by a movement of rotation in such a manner that the fractured surfaces of the two fragments cannot be brought in contact. All these displacements are shown by the skiagraph and are so rendered capable of being remedied. The speaker quoted 25 cases in which those complications were met with in his clinic and the diagnosis was proven by operation. All made a perfect recovery. Moreover, the skiagraph furnishes proof with the recovery that the callus is osseous, not fibrous, and shows the wire imbedded in bone. The uniformity of treatment of fractures of the patella is now recognized, but this is not true of other bones, as, for instance, the lower extremity of the radius, the treatment of which differs with the kind of fracture and the manner of displacement of the fragments. In relation to this fracture our science has been especially enriched by Gallois' "Étude radiographique et expérimentale." Fractures of the metatarsal and tarsal bones were almost entirely unknown before the invention of the skiagraph and the symptoms of such fractures were attributed to inflammation of the foot, contusion, etc., and it frequently happened that in the treatment of them by massage the displacement of the fragments was increased. (While giving his address Prof. Bergmann, and later the other speakers, exhibited innumerable skiagraphs of the injuries under discussion.)

Maunoury of Chartres said that skiagraphy was revolutionizing the study of fractures and dislocations. Its utility has been contested in vain by showing the deformities that may appear in the image on account of the position of the member, the distance of the tube, the angle of incidence of the rays, etc. The errors that one may fall into are not to be imputed to the method, but to the wrong interpretation of the information that it furnishes. In order to avoid these errors it is desirable to be more precise in the technic and the examination. The rôle of skiagraphy in the study of fractures may be considered under diagnosis and treatment. In diagnosis

it renders us incomparable service by showing the number of fragments, their form, position, overlapping, etc. In order to obtain an exact knowledge of a fracture, it should be skiagraphed at two angles. Generally we take the face and profile of the part. Skiagraphy is useful in all fractures, but among those in which its rôle is particularly important may be mentioned the following: Fractures of the upper end of the humerus which will often explain the ankylosis attributed to a periarthritis; fractures of the lower extremity of the radius which are accompanied so frequently with lesions of the wrist; fractures of the tibiotarsal joint; fractures of the astragalus which were considered some years ago as very rare; finally, the fractures of the metatarsus which is a lesion with which military surgeons were well acquainted, but the pathogenesis of which has been discussed for a long time without its true nature being appreciated. The formation of the callus is very interesting to study with the skiagraph. The first period of formation does not manifest itself, but at the end of a dozen days there appears at the extremities of the fragments a light cloud that gradually becomes more pronounced. If the fragments are accurately apposed the callus makes at the level of the fracture a diffuse globular mass which little by little becomes fusiform and compact. If there is slight overlapping a cloudy deposit closes the medullary canal of each fragment and makes a thick layer at the level of contact of the fragments laterally. The time of formation of a definite callus is variable, being dependent upon the thickness of the bone. In certain cases, especially oblique fractures of the tibia, the callus may remain a long time invisible even up to complete union. In the treatment the skiagraph is not less useful. Thanks to it we are better able to reduce fractures and see how far reduction is possible. It is, moreover, easy to keep watch on the position of the fragments and rectify it at will during the progress of knitting. It shows us in what cases suture of the fragments will be necessary, but it is especially useful in fractures of joints, particularly those of the elbow and ankle. Dislocations are much less benefited by the discovery of Roentgen than fractures. Nevertheless, a certain number of unrecognized dislocations have been brought to light by its use. Unfortunately, it gives no information on the most common causes of irreducibility, which usually lie in the soft parts. However, in old luxations it shows us the new osseous formations preventing reduction and often gives interesting information in coxalgia.

Tuffier of Paris from a study by means of the skiagraph of more than two hundred cases of fracture concluded that when reduction was imperfect the site should be cut down upon and the fragments wired together. For cases in which it is difficult to bring the bones in apposition even after cutting down he has invented an instrument to aid in reduction. He believes that the future of all epiphyseal fractures, especially at the elbow and knee, lies in wiring the fragments in the majority of cases.

Thiery of Paris also advocated suture of the fragments as giving the only perfect results in fractures. He contended that it was now considered the only method in severe fractures of the olecranon, patella, complicated fractures generally, etc., and he believed it would prove even more successful in the treatment of simple diaphyseal fractures with overlapping.

Fracture Treated by Massage.—Championnière of Paris spoke on this subject and gave the results of his treatment in a great number of cases. He said that the treatment of fractures by massage is the early application of movement to the wounded part. It should not be confounded with the secondary employment of massage in order to get rid of adhesions or produce flexibility. To avoid confusion he designated his early massage "gluco-kinesis," gentle movement. The treatment consists in the application of methodic movement from the first moment of fracture. The massage should be gentle and easy and approach only the neighborhood of the fracture without actually disturbing it. Under some circumstances motion without massage may be used. With massage and a certain amount of movement contracture disappears early, repair proceeds more rapidly and is more solid. Almost at once the pain disappears and this is the criterion of proper massage and proper movement. No treatment has been able to conquer contracture so well. Other advantages of this treatment are that the blood circulates more freely, the vitality of the skin is preserved, there is no danger of muscles and nerves undergoing atrophy, and there is no need of secondary treatment. The speaker detailed a number of different kinds of fractures treated after this method. Among others he mentioned (1) all fractures of the elbow, especially of the olecranon. He claims he has never been obliged to suture a fracture of the olecranon; (2) all fractures at the wrist which do not allow the hand to fall backward; (3) all fractures of the clavicle; (4) all bimalleolar fractures without a lateral or posterior displacement; (5) all fractures of the scapula, etc.

Cancer of the Cheek.—Morestin of Paris gave some details of 12 cases of this condition that he had seen. He said that in frequency they seem to stand between cancers of the mouth and cancers of the palate. In the 12 cases there was only one woman; the greater number smoked and all had markedly carious teeth. Cancer of the cheek is more serious than other cancers about the face because more insidious. Usually when the surgeon sees it for the first time it is already inoperable. Of 12 cases 7 when first seen had reached this stage. Of the 5 that he operated on, 1 died the same day, 1 has been lost sight of, and the remaining 3 relapsed and died in from three to eight months.

Resection of the Superior Maxilla.—Severeanu of Bucharest has found most advantage from a combination of the vertical incision of Maison-

neuve with the transverse incision of Dieffenbach. He claims that by it the field of operation is made larger, yet the cicatrices remain almost invisible. He believes in doing primary tracheotomy before the resection.

Exploratory Craniectomy in Abscess of the Brain.—Nanu of Bucharest described one case. It was that of a man of thirty-six who had had a purulent otorrhea for ten or twelve years. Shortly before the operation the discharge diminished, became fetid and symptoms of encephalitis developed. The patient entered the hospital in a state of coma and with a total left hemiplegia. The mastoid was trephined, but no pus was found. An exploratory craniectomy was then done. The meninges were found normal. A puncture of the brain was made with a Provaz needle at the level of the psychomotor area. The result was negative. The needle was then introduced higher up, at the level of the temporal lobe, when at once a very fetid pus oozed out. The operator then cut down through the brain substance and found a collection of pus which he evacuated. The site was irrigated and drained. The whole external wound was sutured except a small hole which carried the drainage-tube. Half an hour after the operation the previously paralyzed limbs showed movement, and on the following day the coma and hemiplegia had disappeared. The patient is now entirely well and has returned to his work.

Resection of the Gasserian Ganglion.—Krause of Berlin gave the details of 24 cases operated on by him by the temporal method which he discovered in 1892. Two patients died, one a woman of fifty-eight, extremely feeble, who died in collapse; the other a man of seventy-two, who died the sixth day after operation from sclerosis of the coronary arteries and cardiac insufficiency, although during the six days the wound had united by first intention without fever. Six of the patients operated on more than five years ago are all well and without pain. He therefore believes that in spite of the danger, the operation is a proper one in serious cases of neuralgia.

Resection of the Cervical Sympathetic.—Jonnesco of Bucharest gave statistics of 126 such resections, of which 97 were in epilepsy, 15 in exophthalmic goiter, 12 in glaucoma, one in vertigo due to cerebral anemia, and one in essential migraine. The speaker has modified the operative technic, so as to remove the whole cervical chain, and in the last four cases even the first thoracic ganglion, while preserving intact the superficial cervical plexus and the facial nerve. He performs the entire operation at one time. The therapeutic results of the cases detailed were as follows: Of 13 cases of epilepsy operated on in 1890, 5 have since died, 3 were absolutely cured, 1 improved, and 4 were unsuccessful; of 17 cases in 1897, 6 were cured; 2 improved; 5 unsuccessful, and 4 disappeared from view; of 27 cases in 1899, 2 were improved, 1 unsuccessful, and 24 disappeared from view; of 21 cases in 1900, 1 was cured; 2 improved; 1 unsuccessful, and the result in 17 is not known. Of 15 cases of Basedow's disease, 6 were entirely cured; 4 decidedly improved, and 3, though cured, have been operated on too short a time to be included. The migraine cases are also too recent to give the results.

Chipault of Paris said he had done 40 resections of the cervical sympathetic; 23 for epilepsy, 3 of which were cured, the remainder being uncertain; 2 for exophthalmic goiter; 5 or 6 for glaucoma; 3 for facial neuralgia, all being cured; and 1 for spasmodic torticollis, which was cured. The intracranial resection according to Krause's method was done twice with success, but the speaker considers it a serious operation which should, therefore, be limited to very special indications.

Fracture of the Vertebrae.—Chipault of Paris gave statistics of his treatment in 147 cases. He said that such a number authorized him he thought to speak on the subject. At first he advocated active intervention, only to change his opinion after a number of cases, but now he has returned to almost his first position and believes that active therapy is necessary in most of the cases. To differentiate fractures according to time he designated them *immediate*, when from twenty-four to forty-eight hours old; *recent*, when from five to twenty days old; *old*, when from three to eight months; and *very old* when one year or more. These dates correspond to different critical times in vertebral fracture. He then simply enumerated the number of times different active or non-interfering measures were employed, and excused himself from further details, on the ground that they would take up too much time, which could be found in his book on the "Treatment of Surgical Medullary Diseases," now in press.

REVIEWS.

Transactions of the American Pediatric Society. Eleventh Session, 1899.

This volume of the Transactions of the American Pediatric Society shows that the interest in children's diseases in this country is not allowed to wane. The book contains a series of very interesting articles on what has been well called the specialty of the general practitioner. Certain articles seem to deserve particular mention, because it is well to know where they may be found for reference. Among these are Dr. Koplik's article on "The Increase of Weight in Infants Fed Artificially;" "Cases of Scurvy in Very Young Children," reported by Drs. Crandall, Fruitnight and Huber. Dr. Henry Dwight Chapin has an interesting article on the use of gruels as diluents of cow's milk, and Dr. Forchheimer an article on that debated entity "Vaccinoid."

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IMPROVED TECHNIC FOR THE CURE OF VENTRAL HERNIA.

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ACCORDING to Gross, "ventral hernia is a hernia involving the parietes of the belly, which are rendered defective in consequence of a wound or accidental separation of some of the muscular and tendinous fibers."

Causation.—The essential factor in the production of these herniæ is a deficiency in the fibrous aponeuroses which give strength to the abdominal walls (Kelly). Dr. Henry O. Marcy says that as a result of the surgical division of the abdominal wall, it may occur from defective union in consequence of improper closure of the parts. Spencer Wells points out the fact that operators often failed to include the peritoneum in the line of sutures. Another and not infrequent cause is found in the imperfect or non-union of a portion of the abdominal wall from the use of the drainage-tube, from stitch-abscess and from long incisions.

A review of 340 cases of ventral hernia following abdominal incisions showed that in the great majority the wound healed by granulation (Bull and Coley), while Dr. P. Assmy wisely assigns division of the motor nerves as the cause of ventral hernia following extramedian abdominal sections. In these incisions, parallel, or nearly parallel to the linea alba, the terminal branches of the intercostal nerves supplying the rectus muscle are divided.

There is no anastomosis with the nerves of the other side and, in all probability, none with neighboring nerves. Consequently, that part of the muscle distal to the nerve loses its innervation and undergoes paralysis and atrophy. In the farther development of a hernia, the atrophic and, hence, unresisting portion of the abdominal walls is protruded in response to intra-abdominal pressure. Dr. Andrew F. Currier mentions a lowered vitality from tuberculosis, syphilis, chronic alcoholism and fatty degeneration at the menopause or prolonged drainage as predisposing causes.

Frequency.—Dr. John Homans says he is surprised to find that thirty women out of over three hundred undergoing abdominal operations have ventral hernia, nearly 10 per cent. Dr. H. O. Marcy finds it is variously estimated by different authors that ventral hernia follows the closure of the abdominal wound after laparotomy in from five to ten per cent. of the sum total of cases.

Prevention.—Since Dr. H. O. Marcy has adopted the method of closing the abdominal wall in layers with buried sutures in over one hundred cases of laparotomy he has had but one case of ventral hernia. Dr. Chas. P. Noble finds that closing the abdominal wall in three layers and suturing the aponeurosis of one side upon that of the opposite, thus making a flat seam by an alternate up-and-down stitch, has been valuable in preventing hernia.

The preceding methods of prevention are all interesting but of little value. William J. Mayo states the surgical principle involved in closing the abdominal wall in the following words: "The ingenuity wasted in dealing with the peritoneum has been enormous, the formation of buttresses or peculiar method of handling a membrane which is notoriously impotent to aid in holding back the protrusion is a waste of time." The only object in view is to prevent this membrane from insinuating itself between the muscular and aponeurotic structures, and preventing the union of the real retention agents. A careful study of the anatomical structure of the parts involved and the technic of different operators has led me to adopt the method of operating which I now present.

FIG. 1.

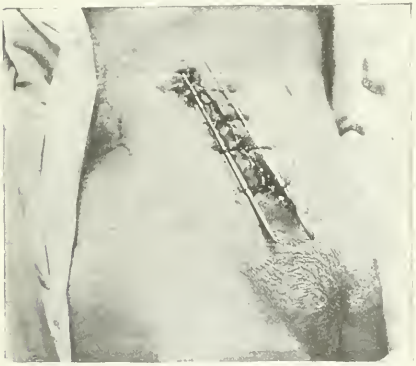
Case I.—Extramedian Ventral Hernia Following Appendectomy.

Technic.—Ventral herniæ may be considered as median and extramedian. The former following median abdominal incisions; the latter resulting mostly from operations for appendicitis.

An elliptical incision is made a little within the border of the opening in the abdominal wall. This must be done carefully, as there is frequently a loop of intestine adherent to the inner surface of the hernial sac. The skin and super-

ficial fasciæ (if they can be distinguished) are then dissected back, exposing the sheath of the rectus muscle. On the outer side a similar dissection is made an inch or more over the external oblique. The edges of the opening are trimmed and a No. 25 silver-wire suture is inserted at the upper angle of the opening by lifting the abdominal wall and passing the needle through the peritoneum, rectus muscle and skin, about one inch from the free border of the opening. The needle on the other end of the wire is similarly passed through the abdominal wall on the opposite side. Silver-wire sutures are inserted at intervals of one inch throughout the entire length of the incision. All the subcutaneous tissues are then united by a continuous kangaroo-tendon suture, and the skin is closed by a continuous suture of the same material.

FIG. 2.



Case I.—Retention Silver-Wire Sutures in Place.

The deep wire sutures are now taken up one by one, moving them back and forward, to make sure that a loop of gut is not included between the wire and the abdominal wall. The ends of the wire are wound around a piece of ivory on either side and drawn sufficiently tight to relieve the tension on the kangaroo-tendon stitches. This is the old and nearly obsolete "quill suture" used for a new purpose. Half the wires are removed in ten days and the remainder in fifteen days. When the hernia is in the median line the principle is the same. The object is to relieve the tension on the stitches which hold the muscular tissues together until firm union has taken place.

Case I.—This illustrates the extramedian operation. The patient, a boy six years old, came under my care at the St. Francis Hospital October 3, 1897, to be treated for ventral hernia. He gave the following history. July 17, 1895, he was operated upon for suppurative appendicitis at the Hartford Hospital. A few days later perforation occurred. He remained in the hospital thirteen months, during which time four operations were performed to close the perforation; the last, by Dr. Wiggin of New York, was successful. During his treatment at the hospital, a rubber drainage-tube was lost in the abdominal cavity. Later an abscess formed in the lumbar

FIG. 3.

Case I.—Condition Before Operation.

region, just above the brim of the pelvis, and when the abscess broke the drainage-tube came out.

Here we have a long history of operations, suppuration and drainage. The opening in the abdominal wall was three and one half inches long by three inches wide. At a consultation, the staff voted against an operation, as there was so little hope of success. The patient was removed to the Woodland Sanatorium, where the operation was performed November 27, 1897. An elliptical incision was made a little within the

FIG. 4.

Case I.—Condition Two and a Half Years After Operation.

border of the opening in the abdominal wall, adhesions were broken up and the skin dissected back, so as to expose the sheath of the rectus muscle. A similar dissection was made on the outer side, over the external oblique.

Beginning at the upper angle, four silver-wire sutures were inserted from the peritoneum outward through the abdominal wall, one inch from the border of the incision on either side. The muscular tissues were closed by a continuous kangaroo-tendon suture, passing through all the subcutaneous tissues, as they could not be separated owing to the long-continued inflammatory and suppurative processes. The skin was then closed by a continuous suture of the same material. The deep sutures were drawn sufficiently tight to relieve the tension on the stitches through the muscles and were retained by winding them around an ivory pencil. The patient was placed on a liquid animal diet to prevent distention of the viscera. The end wires were removed in ten days and the remaining ones in fifteen days. The patient was kept in bed three weeks and made an excellent recovery. The condition two and a half years later is shown in Fig. 4.

The details of this case have been given somewhat fully to show that it was an exceptionally bad case for a good result.

Case II.—A woman operated upon for the removal of a fibroid tumor of the uterus, November 22, 1894. She was admitted to the St. Francis Hospital, where the operation for the radical cure of her ventral hernia was performed by the writer, December 30, 1898. Fig. 5 illustrates the size of the rupture.

The usual elliptical incision was made, the tissues were dissected back on both sides, so as to expose the sheath of the recti muscles, and silver-wire sutures were placed as previously described. The subcutaneous tissues were closed by the usual continuous suture passing through the sheath of the recti muscles. The skin was closed as usual and the deep silver wires were made

FIG. 5.

Case II.—Size of Hernia.

sufficiently tight to relieve the tension. At the end of ten days the dressings were removed and it was found that primary union had taken place perfectly, two of the silver-wire sutures were removed and the rest of the wires were removed five days later. At the end of three weeks she was discharged, fully recovered. Fig. 6 illustrates the condition one year and a half after the operation.

The reason for the unsatisfactory results which

FIG. 6.

Case II.—Condition One and a Half Years After Operation.

so frequently follow operations for the radical cure of ventral hernia in the class of cases in which a very long incision is made is the strong tension necessary to bring the abdominal walls together. The long incision deprives the rectus muscle of its nerve supply and is followed by a protracted period of suppuration and drainage which is attended by a considerable loss of tissue, and a slow closure by granulation. These factors aid in the giving way of the tissues before a proper union of the parts has been secured. The technic here described fully meets these requirements and has proved highly satisfactory in a series of these extreme cases.

DIFFERENTIAL DIAGNOSIS OF CHRONIC RHEUMATISM.

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Probably no better text for a paper on the differential diagnosis of chronic rheumatism could be chosen than these words from Dr. Archibald Garrod's article in Allbutt's System of Medicine. "The term chronic rheumatism," he says, "as usually employed at present, is a survival of the days when scarcely any attempt had been made to distinguish the various diseases which tend to implicate the joints. When we try to limit its use so that it may acquire some degree of scientific accuracy, we find that the great majority of the morbid conditions thus described are not in a strict sense rheumatic at all; and that, further, as we shall see, those very cases in which the evidence of the continued, smouldering activity of the true rheumatic proc-

ess over a period of months or even of years is clearest are not usually included as examples of chronic rheumatism."

A great advance has been made in recent years in the rational diagnosis of acute rheumatism. We are able to define with some degree of accuracy what we mean by the term at present, although it is probable that we still have grouped under the name a series of affections that the pathology and bacteriology of the future will show us to be essentially distinct. Time was when every acute arthritis was thought to be rheumatism. If arthritis occurred in the course of scarlet fever, it was considered to be a rheumatic complication of the disease. When it occurred in the third or fourth week of a gonorrhea, as it so often does, it was still thought to be rheumatic. Gonorrhea and scarlet fever were supposed especially to predispose to the development of rheumatism. Now we know that almost every specific infectious disease may involve joint-complications which are due to the specific cause of the disease, and that even so mild an infection as mumps may in certain epidemics be complicated in a considerable number of the cases by mono- or polyarthritis.

At present we make no distinction between the cases of rheumatism in which one joint is affected and those in which many joints and the heart and even the serous membranes of the brain and cord are affected. We make no distinction between the cases which seem to run their course in a week or ten days and those which last five to eight weeks despite all treatment. Certain observers have found a bacillus in rheumatic joints, others have found a diplococcus, still others have described a degenerate form of staphylococcus which they consider to be causative of the disease. It is not beyond the range of possibility that all of these are specific for so-called rheumatic arthritis under certain circumstances, and that sometimes we will be able to make the distinction between them, just as we are now able to distinguish various microbic infections that were formerly classed under the same head.

The advance, such as it is, in the rational diagnosis of acute rheumatism has not yet invaded the domain of chronic rheumatism. In this subject we have a large number of types of disease, evidently distinct from one another, yet which are classed under the single name chronic rheumatism. As a consequence the prognosis and treatment of the affection in practice are extremely unsatisfactory. Without going very deeply into the subject there are four classes of cases in the group known as chronic rheumatism that can be rather readily distinguished. There is, first, recurring subacute rheumatism. By this is meant not frank attacks of acute rheumatism, but slight attacks of arthritis, with some swelling and effusion into the joints, that occur at no very great intervals in certain predisposed subjects. Such recurring attacks of disease, as the result of the establishment of a predisposition by the original invasion of a malady, are not unusual. Erysipelas is a familiar example; the tendency to slight abscesses, to furunculosis, is also well known. Quinsy and pneumonia recur in certain subjects. These slight attacks of rheumatism are not difficult of diagnosis and yield rather promptly to the ordinary treatment, so that commonly they do not present much difficulty to the practitioner.

The second class of cases that we diagnose as chronic rheumatism occurs especially in children. It consists mainly of symptoms of abarticular rheumatism that recur over and over again, especially during unsettled weather. There are fleeting pains, sometimes described as growing pains, often accompanied by slight swelling of the joints. At times there is that mysterious equivalent for rheumatism in nervous subjects, chorea. Recurring tonsillitis represents another phase of the affection. Erythema nodosum and peliosis rheumatica are still others. Certain chronic skin affections, eczema and psoriasis, seem to be rooted in the same defective constitution that is the predisposing factor for the more frankly rheumatic symptoms. This class of cases must be diagnosed by a comprehensive realization of the significance of the varied symptoms and of their intimate relations with one another. The whole picture can, however, scarcely be mistaken.

The third group of chronic rheumatic cases is the one which really deserves the name. It contains the cases in which joint-lesions that have occurred during an attack of rheumatism persist and even become worse by secondary degenerative processes extending over years. This sometimes leads to permanent damage to the structures of the joint and to lasting deformity. The diagnosis in this case is dependent principally on the history and on the fact that changes in the joint-capsule and in other structures of the joint can be readily detected on palpation. This is true chronic rheumatism, although of course the secondary changes that occur in the joints are probably due to some modification of the original bacteriological cause of the acute rheumatism, as well as to some special tendency in the tissues of the individual. As a rule, these cases are not difficult of diagnosis. The important thing is the clear history of the original rheumatism.

There is a fourth class of cases, more numerous than any of the others, which is often diagnosed chronic rheumatism but which is really not rheumatism in any proper sense of the word. It contains a most varied collection of ailments under this very accommodating title. It is the differential diagnosis of these affections that I wish to discuss. They are characterized especially by pain. As a rule, when a patient comes to a physician complaining of pain in the neighborhood of a joint, with some disability for which there is no obvious traumatic cause, the affection is set down as rheumatism, and is treated as such, al-

though there may be no history of precedent rheumatism. Many of the cases are relieved, for the time at least, by ordinary rheumatic treatment, because in our day it must be remembered that it is mainly the coal-tar antipyretics and analgesics that are administered as remedies for rheumatism. These will relieve painful conditions in peripheral nerves due to almost any cause. Any one who has seen salicylic acid, for instance, used as a dressing for wounds knows how soothing it is and how little patients suffer from the ordinary after-effects of slight surgical operations, or the discomforts attached to the removal of bandages, and the like, where it is used as a dressing. The pain even of ordinary toothache will be greatly diminished by a full dose of any of the ordinary coal-tar analgesics. That extremely bothersome symptom, pain, due to infiltration at the root of a tooth, just at the beginning of an abscess, can be better relieved by this method than by any other, and dentists now use coal-tar products to a considerable extent. This is a true arthritic pain, for the teeth are jointed to the jaw, but we would scarcely speak of it as rheumatic. Relief of pain by the salicylates, or coal-tar analgesics, does not confirm the diagnosis rheumatism. The causes for the pain continue to act. It recurs and the only relief lies in the further administration of drugs, which do absolutely nothing, however, to remove the cause of the discomfort. The only rational treatment would be to discover the cause of the painful condition and endeavor to ameliorate it.

In some twenty cases seen in private practice and at Professor Katzenbach's clinic at the New York Polyclinic during the past year and a half patients have come with the ready-made diagnosis rheumatism, or they had been treated for rheumatism by other physicians, yet on examination they were found to have only what may be called pseudo-chronic rheumatism. While the cases are too few to have any statistical value, the conditions underlying the pain give a fair idea of the character of the affections that are often mistaken for chronic rheumatism. In eight of the cases the painful symptoms were in the foot and leg and the patients were found to have a greater or less degree of flatfoot or, as it has been well called, weakfoot. Five of these eight cases were very marked examples of this condition. Three of them had been treated for a considerable length of time for rheumatism by various physicians. Some had examined the foot and leg, others had not. One case in private practice had gone the rounds to a number of general practitioners. The pain of weakfoot is not confined to the foot itself, nor is it always so localized in the ankle and instep as to call especial attention to these parts. Frequently the pain is most marked near the proximal end of the great toe and in the heel; in other cases it extends to the calf. It is probable that the pain in the region of the calf is due to the fact that the muscles here, owing to the defect in the arch at the ankle, are employed at a mechanical disadvantage as compared with their use under normal conditions. This leads to overtire and causes pain which extends even as high as the knee. The diffuseness of the pain and the fact that it is apt to be worse on damp days, when the overstretched ligaments are still further relaxed and when the wearing of rubbers emphasizes the abnormality in the ankle, help to confirm the mistaken diagnosis rheumatism.

In two of the more pronounced cases of flatfoot the pain was first noticed only shortly before the patients applied for treatment. The deformity had evidently been developing for some time, but had given no symptoms. In one of the cases there had been a considerable loss of weight shortly before. The general impairment of nutrition probably weakened still further the already abnormally-functioning tissues of the ankle-joint. In the other case a stumble, with some turning of the ankle, brought on the pain in the right foot and it afterward developed in the left, probably as the result of the lameness in the other leg, throwing extra work on the uninjured ankle. This occurrence of symptoms from weakfoot, when the condition is already well-advanced and without any preliminary discomfort, is not very unusual. Patients are incredulous that the condition of flatfoot which they have had more or less for years should be the cause of pains that they feel only for a few months, or sometimes even less. Prompt and permanent relief, however, follows the employment of the proper treatment for the flatfoot and convinces them of the correctness of the diagnosis.

It is a source of not a little error in these cases of flatfoot to consider that the pain and disability are always in proportion to the amount of deformity present. Dr. Whitman, who has made a special study of this subject of flatfoot, says: "The inherited flatfoot, or that acquired early in life, or the complete flatfoot of long duration, or the weakfoot to which the individual has accommodated himself, may cause no actual discomfort or pain. There is no definite relation between the degree of deformity and the severity of the symptoms. If these facts are borne in mind one of the most important stumbling-blocks in the way of a proper apprehension of the true nature of the disability and its effective treatment will have been removed."

He continues: "One must also rid one's mind of the notion that the weak- and flatfoot is a necessary sign of degeneration to be found only among the weak-fibered and ill-nourished. The predisposition to deformity and the weakfoot in its slighter grade are perhaps as common in the well-born and well-fed as among the traditional mill-girls. The development of the deformity, the exchange of discomfort for disability, the inherited or acquired predisposition existing will naturally be more frequent, more rapid and more marked, among those who are obliged to use

the feet constantly then among those who are not."

Rheumatism may affect a weakfoot, but most of the cases give what are falsely supposed to be rheumatic symptoms. The important points for the diagnosis of flatfoot are to be found in the gait of the patient, the posture when standing, the limitation of movement, and the spastic, painful condition that can be demonstrated by passive and voluntary motion during a careful examination. The patient's walk is almost typical. Usually the heel is brought down more forcibly than normally and there is a tendency to eversion of the toes. The pigeon-toe walk, the characteristic walk of the American Indian, by the way, although usually the subject of so much derision, is a sign of an especially-strong arch to the foot. If the line of the crest of the tibia continued into the foot would fall on the big toe or even to the inner side of it, then the strain is being borne too much on the inner side of the foot. This often gives rise to some swelling around the ankle and some effusion into the joints, so that the diagnosis rheumatism seems justified. Often the shoes disclose the fact that the feet are being used at a mechanical disadvantage. The heels are down at the back and the inner part of the sole is more worn than the rest of the shoe. In mild cases of flat- or weakfoot, especially in neurotic patients who unconsciously exaggerate the discomfort and pain they feel, it is often hard to convince oneself that the pains complained of are due to the slight amount of deformity that exists. The placing of a wedge of felt on the inner side of the foot will, with appropriate massage and passive motion, often relieve the symptoms and show what is the real cause at work in producing them.

Five cases of supposed chronic rheumatism were really occupation neuroses. Four of these complained of vague pains in the forearm and two of them in the shoulder. A fifth patient had his pains in the knee. He worked a lathe all day with his right foot, while bearing his weight on his left leg. It was in this left leg that the painful condition developed in the neighborhood of the knee. Discomfort was felt not only during the day but also at night. This was sometimes enough to disturb sleep and was worse on damp days. I have recently had a dentist tell me that a similar condition of discomfort very often develops in dentists from long-continued use of a dental engine. As with the lathe it develops not in the leg used to run the engine, but in the other on which the body-weight is borne. Disability finally results and a spastic, neuralgic condition develops around the knee-joint, which prevents further work for some time. As a result of years of such work with the dental engine and lathe there is a characteristic halt in the gait of many dentists that is well-recognized by the dentists themselves. In a recent magazine article descriptive of the working of a bicycle factory, attention was called to these painful conditions that develop in the legs of those employed to run lathes. Such affections are evidently much more common than has been supposed and occupation neuroses or musculoses of the leg are by no means rare. Many of them are constantly taken for chronic rheumatism.

It is in the arm, however, that neuroses are most frequent. Writer's cramp is a typical example. Of the four cases, however, that have been under my personal observation during this past year in only two did the trouble come from excessive writing. One was the result of improper use of the muscles of the arm in ironing shirt-bosoms; another occurred in a meat-inspector who sat for six hours a day examining with a microscope specimens of meat for export. The position assumed was an awkward one, and the frequent movements required in examining a number of fields in successive microscopic slides were the cause of vague pains in the upper arm and shoulder that sometimes even disturb the patient's rest at night.

It is unfortunate that the occupation neurosis which develops from writing in improper positions (for it is this rather than excessive writing that brings it on) should have been labeled "writer's cramp." The affection is more frequently a brachyalgia, a sore arm with consequent disability, than it is a muscular cramp. These sore arms may develop from many causes other than the occupation that requires fine movements and accurate coordination. Bernhardt of Berlin described some years ago an epicondylalgia, a painful affection of the condyles of the humerus due to some unusual exertion of the muscles of the forearm. It occurs typically in nervous women after carrying an umbrella on a stormy day or in waitresses as a result of carrying heavy dishes. A form of brachyalgia analogous to this has become very familiar to us here in America since the introduction of the long skirts. These garments necessitate constant holding up, and, as they are often heavy, pains in the forearm develop which are usually most marked about the wrist. As the pain of epicondylalgia occurs also in the neighborhood of a joint the error of considering that both of these affections are due to the rheumatic diathesis is easily made. The fact that the discomfort is apt to be more marked on damp days adds to the suspicion of rheumatism and with some show of reason.

These painful conditions in the arm do not develop except in patients with neurotic tendencies or in those who by heredity have a somewhat unstable nervous system. Very often, too, at the time of their development, patients are not in as good physical condition as they usually are. It is well, therefore, in such subjects to exclude the functional neuroses and obtain some unmistakable symptom of rheumatism before diagnosing painful conditions as rheumatic and treating them as such. Instead of the depressant treatment by analgesics, which may afford temporary

relief, these patients usually need tonic and constitutional treatment with regulation of their methods of performing habitual actions.

In 3 cases, that which had been diagnosed chronic rheumatism proved to be traumatic neuroses of joints. By this I mean that condition of sensitiveness to external influences and to the slightest overexertion which develops in a joint after an injury, although no trace of the injury remains as far as any ordinary examination can determine. A dislocation is completely reduced, yet for months, sometimes years after, the joint structures act as a most sensitive barometer to changes in the weather and resent at once any extra work that may be put on them. Sometimes this sensitiveness remains in abeyance for long periods and then becomes noticeable when the patient's general health has deteriorated for some reason, or when a certain amount of nervous exhaustion has come on. Such cases are often greatly benefited by massage. It would seem that the old injury disturbed some of the lymph-paths around the joint and so interfered with the normal metabolism of the peripheral nerve-endings to the part, making them more sensitive.

Two cases of varicose veins of the leg had been treated as rheumatism before coming to the clinic. In neither case was the varicose condition very marked. There were small bunches of varicose veins in the neighborhood of the knee and it was here that pain was especially marked. It has been pointed out that at times when the superficial veins are not very varicose some of the deep veins are markedly dilated and tortuous. The dull, heavy ache of these concealed varicose veins can be rather easily mistaken for rheumatic pains.

One case of supposed chronic rheumatism proved to be meralgia paresthetica. There was on the outside of his thigh a region of lowered sensibility in which he had burning sensations that sometimes grew positively painful. The condition became worse in the winter and, situated as it was over the large muscles of the thigh, was readily mistaken for muscular rheumatism and treated as such. As there is no known method of treatment that will surely improve the condition, it might almost as well be treated as rheumatism as anything else except that the use of counterirritants, which often do good in muscular rheumatism, usually makes the painful condition of meralgia paresthetica worse.

All of these cases seem of interest, because they show that there are a number of chronic painful conditions, sometimes mistaken for chronic rheumatism, that should be carefully differentiated if patients are to be more than temporarily benefited. In addition to these there is undoubtedly in genuine chronic rheumatism, that is, in the chronic painful conditions that develop as a consequence of true rheumatism, a group of affections the differentiation of which from one another will serve as a suggestive text for many an advance in diagnostic methods in the century that is just opening. Chronic rheumatic cases deserve and will repay careful study. Too often now they are promptly labeled and set aside as if our knowledge of them were definite and complete and nothing further could be learned about them.

THE ESSENTIAL CONDITIONS FOR HABITATION TO DEVELOP AND MAINTAIN HEALTHFUL FAMILY EXISTENCE.

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Sound family life conserves social stability. That element that differentiates man from animal is the home, *viz.*, a condition for rational development.

The primordial conception of home was merely shelter, manifest in the relics of prehistoric and savage dwellings. With the changing social-political fabric there is an evolution of housing consonant with advancing civilization.

Centers of population or great cities, with their attendant crowding, congested areas and tall houses, have existed since the earliest times. The tower of Babel was sixty stories high, or from five hundred to eight hundred feet. Herodotus tells us of Babylonian houses four or five stories high. Jerusalem had eight- and ten-story buildings. Athenian law limited buildings for residence purposes to ten stories. Roman buildings were ten to twelve stories front, and fourteen to fifteen stories rear elevation, with some rooms eight or ten feet high and others not tall enough to stand in. Roman poets speak of lodgings into which "one must creep." The medieval feudal era finds humanity surging within the protection of city walls. Rheims had a curious law forbidding structures for residence purposes to be higher than the eaves of the cathedral. It is recorded that when the building was going up the sexton was enjoined to look out daily from the portholes in the eaves to see that the structure was not being built higher than the level of his eyes

All nations thus acknowledged their obligation as to proper housing. We of the twentieth century have a broader, more intelligent realization of this social indebtedness. Native traits and social facts are expressive of communities just as dwellings translate their tenants' characteristics. The essential conditions of wholesome family life are health, character, intelligence, industry, frugality, mutual affection and forbearance and, finally, the means to provide *private* environment for the growth and maintenance of these qualities. Union of purpose and interest are scattered when the soundness of family life is broken into by promiscuous association. Self-sacrifice, warmth of reciprocal relations, and a proper sense of duty are lost by lack of privacy in the home. Such privacy is attainable only in

country where the broad areas, wooding, fresh air and sunshine, contribute to health and wealth. The increase and welfare of families are proven to be in line with increase in individual homes. Improved commercial conditions, with increased immigration, increase the activity of home builders and isolated country homes and cause a 1.9 per cent. natural increase of population.

The city with its individualism, thronging humanity and overflowing tenements, does not furnish good soil for the growth of the home ideal except for people of means who can avoid these conditions. Unfortunately, the toiler's home ordinarily lies in crowded districts, in manufacturing colonies, in tenements where he is powerless to modify surroundings created by the greed or ignorance of those who live to "put money in thy purse." Air, light and sunshine never enter such front and rear double-deckers. Filth and noise reign supreme. Water for drinking, let alone for culinary and toilet purposes, is often altogether wanting or inadequately supplied. Winding, dark, foul-smelling halls and stairways teem with pale, rickety, dirty children, for these, or the narrow, unsprinkled, uncleaned, garbage-laden, so-called streets, are their only playground. The same unlighted passage-ways are the meeting-places of the young and older tenants unless driven by natural craving for light, warmth, amusement and even advice and good fellowship, to the brothel or saloon—the poor man's club. On hot nights our unwashed, next to naked brother is found gasping for breath either on the house-tops or on the sidewalks or cobble-paved streets. In Chicago I have seen the babes placed side by side on top of the garbage-boxes for protection from the crush of sweltering humanity. Is it any wonder that modesty, chastity, cleanliness and godliness are wanting, and that disease, prostitution, drunkenness and crime prevail? New York City during its heated term often turns on its water plugs, the rush of water down the streets temporarily cleansing and cooling its miserable, sizzling, slum denizens. Think of a thirteen year-old high-school girl, a possible public school-teacher, who, never in the thirteen years of her life having been in a bathtub, when first placed there by a philanthropic friend, turned white with abject fear and tremblingly clung to the sides. She it was who piteously said, "How nice it would be could we have a water faucet in our house." This house, perhaps, and others like it or worse, belongs to a philanthropist who has inconsistently given millions for settlement and educational purposes. Likewise the right hand of the Corporation of New York City's Grace Church has no knowledge of what its left hand does. Such are the deplorable conditions that make families indifferent to the common proprieties of life, lead to deliberate debauchery, make the tenement-house a synonym for unwholesomeness, degradation, and a menace to republican government. Again, think of the unfamiliarity of many children with flowers, green grass or trees and, here in Chicago, our beautiful lake. Jacob Riis tells of the boy, who, upon being taken to the country and seeing cows chew their cud, asked, "Say, Mister, who pays for all de gum dem cows chew?"

What matter if occasionally we find the bathtub used as a crib for the twins, or as a place in which to salt down the pork or store the coal.

On cold days think of people huddling and crowding in dark, vermin-reeking rooms where noise and indescribable odors prevail; where babes and food are pushed under the beds to be withdrawn as occasion demands; where contagion and death lurk; for here live the vegetable hucksters assorting their wares, and later selling them on the avenues; here also live the sweaters, furnishing the well-to-do with unclean, disease-laden garments; here live our little three-and-a-half-year-old babes sewing on labels; their mothers stitching for a starvation wage so that our thoughtless, bargain-hunting women may buy cheap underwear; here live the necktie-makers with aspirations for higher things; in fact, here live an army of makers of pants, coats, vests, buttonholes, neckties, wrappers, ladies' skirts and coats, shirt-waists, and underwear. Is it any wonder that tuberculosis, syphilis and gonorrhea run riot and, despite the high infantile and contagious-disease mortality of the slums, that diphtheria, scarlet fever, measles, whooping-cough, etc., creep into and find firm footing in our comfortable homes and places?

General, maternity, children's, seaside, and floating hospitals, foundling asylums, insane hospitals, epileptic colonies, institutions for defective and delinquent children pay both deplorable and generous tribute to such awful surroundings. It costs London alone £15,000,000 a year for sickness from bad housing. What a blot on our much-vaunted civilization are the *very existence* of laws pertaining to dependent and delinquent children. Juvenile courts and reformatories, not to speak of adult crime and jails; 80 per cent. of New York City's crimes are committed by persons who have never had a home. Read the following arraignment of Sing Sing's convict No. 315 in the *Star of Hope* and reflect. He says of the criminal of circumstance or environment: "Society's crime against this class of evil-doers is our toleration of the city slum." . . . "The accidental criminal has the recollection of better days and better things to cheer him. His memory harks back to other times and scenes. His idols may be shattered, but his ideals remain and with their aid he can fathom the depth he has fallen; and he can, with the help of God and the outstretched hands of those who love him, struggle from out of the slough of evil, back to the narrow path again. But the criminal of circumstance is denied this. His memory holds no picture of a clean, sacred home-life, no recollections of a happy childhood; but instead it is always the streets and the foul, evil-smelling brick barriers that form the background of the picture-

phantoms of slatternly women and emaciated, crying babies; miasms of foul smells and recollections of hunger, cold, drunkenness and disorder. His first recollections of law and order are indissolubly associated with the policeman, his natural enemy, the despoiler of his youthful pleasures."

The slum and tenement evil is engaging the attention of the broad-minded, thinking public of all the larger commercial centers. Lord Shaftsbury influenced England's Parliament as early as 1851 to legislate and authorize municipalities to clear insanitary areas and to provide lodging- and dwelling-houses for the working classes.

London, Glasgow, Manchester, with their model tenement-, lodging-house and suburban home system, toiler's clubs, coffee-houses, reading-rooms and social settlement have taught the world what can be done to lessen this organic disease (the tenement evil) preying upon national existence.

New York, Boston, Philadelphia, Brooklyn, Dayton, and many other American cities later assumed this civic responsibility. Notwithstanding past and present agitation there is still open flagrant violation of health laws governing the construction, equipment and care of tenements. By an absolute divorce from politics, health departments would be given larger powers to strictly enforce their regulations and to add to their resources and authority. The municipalities of the old and private enterprise of the new world have proven that model tenements pay from four to five per cent. and from five to six per cent. respectively upon their investment. A three- to four-per-cent. remuneration is received from model lodging-houses.

Such model tenements are built with outside public staircases and private halls with apartments of two light rooms, with sculleries containing sanitary wash-tubs, sinks and water-closets, properly lighted and ventilated. Artificial lighting and a hot-water supply is also added, and often common laundry facilities, as well as club-rooms and libraries. Others of these tenements also have interior parks with fountains, playgrounds and sand-heaps for the children and weekly band concerts. And, mind you, this is upon a paying basis, as well as brought within the means of the poor, three-fourths of whom are deserving and who will live comfortably if but given the opportunity. Fifty-two to sixty cents a week is the average for one room, while one dollar and fifty cents and upward will pay for the two-room apartment and scullery above described. As types the Riverside Building of Brooklyn and the Mill's Hotel of New York City show that our toilers appreciate and take advantage of facilities offered for good housing and living. In spite of the evident benefit of these model tenements they cannot compare to a detached suburban house with its atmosphere of privacy, health and real home spirit, with flower-garden, vegetable-patch, chickens, cat, dogs, and maybe even a cow and some pigs. No small city parks, playgrounds or public baths, so necessary to crowded areas, can take the place of these things that the country furnishes.

A proletarian writes, "Bay windows and front-door bells and baths are the two civilizing agencies of the highest good to the laboring people." In the words of another the isolated home should be a landlocked harbor, a refuge, a school for building of character and of future usefulness, and, as Lyman Abbott says, is more important than the church." A place where a mother trains her boys and girls to work and help each other so that when their time comes for going out into the world they are well prepared to take up life's joys, burdens and struggles.

Suburban housing companies have demonstrated that this system is both practicable and remunerative. Suburban homes wherever and whenever possible should supersede even model tenements. Our much-respected fellow, Dr. Leartes Connor, very recently speaking of the city boy, writes, "When he would shout he must keep still; when he would run he must walk; so that we are coming to look upon the country boy who has healthful surroundings and normal development as the salvation of mankind." To reach the city outskirts and the country, the bicycle has become a cheap and important means of transportation. The much-abused trolley line is another factor of consequence. Rapid and cheaper transportation is one of the crying problems of the day. Lower rates and better service should become local political issues. Workingmen must combine and lead, not be led, in municipal affairs. He must oftener use his influence his vote, his greatest power, for the enactment and enforcement of sanitary laws as applied to labor. He must see to it that his son's and daughter's employment is made healthful and effective by sanitary environment and shorter hours; that woman and child labor, so destructive to the home, be restricted or abolished; that adequate school accommodation be supplied; that parental vacation and industrial schools supplant corrective and penal institutions; that libraries, clubs and social settlements dislodge the dive and saloon. Let him become an active power for good in his own immediate neighborhood. When leisure and prosperity come, let him not be indifferent to his civic duty that after all so nearly concerns his private comfort. The most hopeful sign of the age is the widespread knowledge and interest in the present and our fellow-man, rather than in the future and in our own future state.

Disease in Alaska.—Reports from the Interior Department indicate that la grippe, pneumonia and measles have been epidemic all summer among the Eskimos. These ravages have extended from the Aleutian Islands to Point Barrow.

GASTROPTOSIS WITH SPECIAL REFERENCE TO A NEW MECHANICAL SUPPORT.

By H. W. LINCOLN, M.D.,
OF BROOKLYN;
GASTROLOGIST TO THE BUSHWICK CENTRAL HOSPITAL AND TO THE BUSHWICK AND EAST BROOKLYN DISPENSARY.

The following is offered for publication to reiterate the good results derived from a form of mechanical treatment in gastroptotic cases spoken of by Rose in his very interesting and exhaustive paper on Glénard's disease, appearing in *The Post-Graduate* for March, 1900.

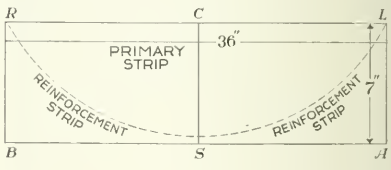
Gastroptosis is a prolapse or downward displacement of the stomach. Mathieu speaks of the condition not exactly *per se*, but in connection with the general displacement of the abdominal organs. We owe much to Glénard for our knowledge of this condition, more particularly to the original recognition, diagnosis and treatment of gastroptosis. Although spoken of earlier, this author first directed public attention toward splanchnoptosis and indeed to gastroptosis. As stated by Rose, it occurs independent of other ptoses, and much more frequently than is admitted by many. The stomach *alone* more often lies more deeply than does one kidney. Of course, I do not mean that the entire organ, like the kidneys, is "floating," for the cardiac orifice must needs remain *in situ*.

That gastroptosis may exist for many years with no manifestations whatsoever is well known. As a rule, however, sooner or later, we are confronted with the complaints of patients in whom a careful examination, both physical and interrogative, will reveal a gastric displacement.

As to the etiology of this affection, I cannot do better than quote Dr. Rose. "(1) Constitutional Defects: Those feebly nourished, especially if compelled to spend many hours of each day upon the feet; tuberculously inclined subjects, kyphosis, etc. (2) Causes within the stomach: Motor insufficiency; pyloric tumor (causing retention) or growth anywhere in the organ causing ptosis by weight. (3) Causes without the stomach: Tumors of the liver or spleen; enlargement of the abdominal space. Here the well-known post-puerperal or Landau cases are to be classified and they form a large proportion of the cases of gastroptosis. Failure to properly bandage the subject after confinement plays a prominent part in the causation of this condition. A somewhat similar condition attains in the male upon the sudden reduction of flesh after the cure of obesity. Corsets and waistbands, skirt strings, etc., greatly aggravate, if they do not contribute to the cause of gastroptosis. Stiller's symptom, *i. e.*, floating tenth rib, recently under discussion, if universally present, would enable prophylactic treatment in many cases. This would accomplish much for these people. Stiller maintains that it occurs in all cases which present fallen stomachs and in many patients without such, but in the latter he claims that sooner or later we will find evidences of splanchnoptosis or gastroptosis. It is needless to say that this theory is both supported and contradicted with equal vigor. Chlorosis and anemia play important parts in the etiology of the malady under consideration.

Treatment.—All pressure at the waist should be removed, as this aggravates the abnormality. The clothing should be suspended from the shoulders. Investigate the gastric, intestinal and bowel functions and arrange a diet accordingly, increasing the latter even to forced feeding. These patients must be nourished to the very highest point. The gastric secretion, in the majority of cases, is hyperchlorhydric, hence a good, full, ordinary, wholesome diet will be acceptable. In some of the severer types the Weir Mitchell rest-cure may have to be resorted to from the beginning. In the treatment of the constipation which is so often present, sweet-oil enemata have yielded me by far the best results. Exercise, electricity (internal and external), massage and hydrotherapy are useful adjuncts. In extremely nervous individuals some bromide preparation is of service; if there is anemia, iron is indicated. To overcome anorexia, condurango, nux vomica and quassia, in combination, have a happy effect. Tannate of orexine may

Fig. 1.



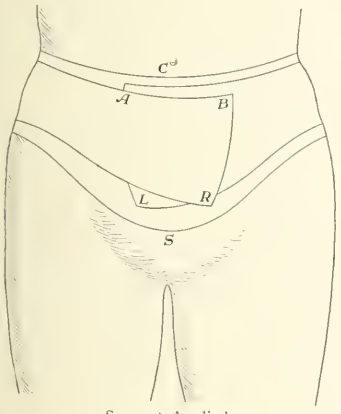
Pattern.

also be used. This, I believe, comprises the usual deviations from the normal, which, if corrected, increase the body weight, muscular and nerve energy and, hence, tend toward a readjustment of the equilibrium of the abdominal organs.

With reference to the mechanical treatment, abdominal binders and supporters of various kinds have been advocated. Some are supplied with an extra "pad" for the special support of the right kidney, the one most often out of place. The tendency of each and all of these devices (unless laced too tightly for the comfort of the wearer) is to slip upward, thereby exerting precisely the pressure which we wish to obviate. The plaster already spoken of becomes to all intents and purposes a part of the patient and may be applied much more snugly than any bandage and still be agreeable to the wearer. It consists, as shown in the cut, of a piece of ordinary rubber-plaster, 36 inches long and either 12 or 7 inches wide, according to the size of the individual. The latter width I find better in most cases. It is cut following the dotted line L. S. R. The pieces L. S. A. and R. S. B. serve as reenforcement pieces to be spoken of later. Having the body stripped from the level of the umbilicus to the hips and with a third person to assist if pos-

sible, apply point S. in the median line one or two inches above the symphysis, the line S. C. should lie directly over the median line of the abdomen. Having your assistant support the patient on the right side, apply the plaster included by C. S. L.; then with the support at the left, apply in like manner C. S. R.; draw as taught as possible during application. The two ends of this plaster will overlap at the back of the patient. As to the reenforcement pieces which in reality are the most essential of this mechanical device, apply L. an inch or so to the right of S., running the edge L. A. vertically up over the already applied plaster. Pull with great force toward the patient's left as L. S. A. is adjusted; apply the third piece to the right side in like manner. These two pieces will meet or overlap at the patient's back. Trim the edges in the regions of the hips and umbilicus if necessary. The lower abdomen is now firmly and comfortably supported, and many patients will at once express relief, more particularly those complaining of pain in the back, dragging sensations, nausea, vertigo, etc. Landau cases as a rule do well with the usual binder, but even here I have had some excellent results with the method described. This form of brace may remain intact for from five to ten weeks, according to the time of year, diaphoretic propensities of the patient, etc. The dermal irritation is slight and even this may be obviated by the employment in conjunction with the rubber plaster of a form of zinc plaster recently imported from Germany. At the clinic of the Post-Graduate Hospital this support has been used in over fifty cases and I have employed it in upward of thirty cases in private practice. Of the dispensary patients I recall but two in whom the results were not gratifying. One patient removed the plaster within twenty-four hours. In outside work I have yet to meet the first unsatisfactory result.

Fig. 2.



Support Applied.

113 Hancock Street.

THE ADVANCES IN MEDICINE.[1]

By MARTIN M. KITTELL, M.D.,
of Kinderhook, N. Y.

In addressing you as President of the Columbia County Medical Society, which honor you saw fit to confer on me at our last annual meeting, for which I thank you, Gentlemen, I can find nothing more suitable than a brief review of the past, particularly as the nineteenth century is closing and we are soon to enter the much talked of twentieth. For want of time in preparing so broad a subject, also the trespass upon your time this afternoon, I cannot give a review of the past in detail, neither shall I attempt to handle the subject of the scientific present at any great length, for it is inexhaustible in its more perfected profession. Neither shall I make my remarks in the form of criticism of past treatment, nor of those who may adhere to methods which I might deem as obsolete; for after all good results are the foundation of steadfastness in our methods, and we are inclined to hold fast to that which has served us well.

Of the eruptive diseases little can be said concerning the improved method of treatment, as they have been and are still recognized as self-limited diseases, and can be but little influenced in their course. However, I think we are more keen to observe and ever to be on the alert for complications that may arise and prove more serious than the original disease itself; for instance, measles was once thought to be an insignificant illness of childhood, almost essential to the child's existence. Now we recognize the complications that change the aspect of the case. The frequent complications are bronchitis, bronchopneumonia, and even tuberculosis might be traced to the severe complicated measles. In scarlet fever it is necessary to watch carefully, even in the most mild cases, for the scarlatinal nephritis and also otitis media which have made it our duty to use the antiseptic sprays in all cases of scarlatinal anginosa. However, I may state that in my own observation the character of the epidemic has much influence on the complications of the cases; for, in treating several cases last fall and having other cases come to my notice only at the stage of desquamation, in which no treatment or even care or prudence has been observed, complications have not arisen up to this time.

Diphtheria, a disease which has been long recognized and has had a high mortality-rate through all ages, was most ably described as long ago as 1770 by Samuel Bard of New York; and it was later recognized by Pierre Bretonneau of Tours that the angina suffocata, cyanche maligna, and the putrid throat were one and the same disease—diphtheria. It can readily be appreciated that, with a disease causing such destruction of life, the minds of the physicians were sorely taxed, and a great diversity of opin-

[1] President's Address to the Columbia County Medical Society, Hudson, N. Y., May, 1900.

ion and method of treatment prevailed. With some it seemed that the most important thing to do was to remove the membrane and many ways were resorted to in order to reach that end, application and insufflation of digestents or solvents, even forcible removal by mechanical means, regardless of the bleeding absorbing surface left, for more rapid invasion of the toxins, the result of this procedure. But happily within the last decade we have had introduced, established and lauded by almost every physician throughout the land a preparation which Germany can have the credit of bringing into prominence, diphtheria antitoxin, which at this time needs no further mention. I am more convinced with each new experience that to get the best results, we must use it early and in maximum doses. We should not content ourselves with this alone, for it is important that the antiseptic sprays and douches are used, and the early use of stimulants is also necessary. In a small percentage of cases the intubation set of O'Dwyer must be used to save life. This invention, as perfected by the last-named gentleman, has caused to be impressed in the memory of the profession to-day far more than a monument of stone of the life and existence of Dr. O'Dwyer. One of the greatest benefits to the public has been the recognition of the contagious and infectious character of these diseases, the quarantine regulations adopted, and most rigidly enforced.

In the treatment of pneumonia, from bloodletting, depleting cathartics, closely confined room, almost stifling, to avoid catching more cold, a complete swing of the pendulum has taken place during these years of experience and careful observation in the use of cold applications, cold sheet bath, large well-ventilated rooms, and the conservative saving of the strength of the patient and the early use of stimulants and cardiac tonics. However, I may state that for a few selected cases, venesection might be indicated and is advocated by some writers. During the early part of this century the profession bled too much, and possibly in the last two or three decades we have bled too little.

It took the profession some time to define typhoid fever as a distinct disease, with constant pathological changes, and the profession was also some time in recognizing the fact that it is not a disease to be wholly, in part, or even at all treated with medicines. Careful nursing, well-selected diet, cold sponge or tub-bath, with a well-ventilated room, form the most essential régime for an uncomplicated case. Of the complications that may occur, and are sometimes numerous, I will not speak, as the symptoms arising usually dictate some remedy to correct the existing evil.

With a more thorough knowledge of the anatomy, physiological functions and localization of the special nerve centers, the diseases of the nerve centers, the diseases of the nervous system and injuries to those organs are more intelligently treated, tumors located, and in many instances successfully removed. Surgery of the brain, through this knowledge, has made rapid strides in the past decade. For diseases of the spinal cord, hemorrhage and injuries, laminectomies and other operations have so early reached the point of perfection in surgical art that so-called broken necks are not without hope of recovery.

In the obstetrical field the same progress has been made, more pronounced, however, in the irregular or abnormal cases of labor, incomplete abortion, and puerperal eclampsia, where active surgical intervention saves many lives and diminishes the number of cases of chronic endometritis, with extention of disease to the tubo-ovarian structures with possible lifelong invalidism. Artificial feeding of those infants who are unfortunately deprived of Nature's food has been much improved by the great increase in our physiological and chemical knowledge of the stomach, and of the food products as well; through such we are enabled to meet the requirements that promote a healthy development of the various structures of the body.

The perfection of the microscope has placed it as one of the most valuable instruments to the physician and surgeon as well. In the hands of the experienced microscopist, he can at short notice differentiate for your decision in treatment the benign or malignant growths, the character of sputum, blood-count for pernicious and other forms of anemia, malaria, and, indeed, define with great accuracy the character of many diseases otherwise decidedly obscure. In disease of the bladder and kidney, the microscope plays an important part. In connection with the modern technic of catheterization of the ureters and the explorations with the cystoscope, our superiority of treatment has advanced largely through our more accurate facilities in differentiation and diagnosis of these diseases. From the rude, painful torture in surgery, healing wounds by suppuration and granulation in years past, we have reached the period of painless surgery, due to the discovery and application of anesthetics by Dr. Morton of Boston in 1846, and of the healing of wounds, either accidental or surgical, by primary union through the discovery of antiseptic and aseptic surgery by Lister, and of the practically bloodless operations, even that of amputation of the hip-joint by John A. Wyeth. Innumerable operations for various pathological conditions that in years past were not recognized or differentiated are now known and remedied.

Before closing I must pay a high tribute to those of the profession who several years ago were and to those who are now engaged in the separate and special fields of professional work. To them we can feel under great obligations for the abundance and excellent character of the literature and scientific reports, the result of long

and careful investigation. We have also their wise council at our disposal which enables us to be better fitted for the variety of diagnoses and the treatment of almost all the special branches, which we must represent and embody as a whole for our study and practice.

Our field of labor is too small and sparsely populated for us to become specialists, but we must and do equip ourselves very creditably indeed for the range of our opportunities. We can look into the past, and meditate on the present, and justly feel proud of our profession, that it is keeping pace with other scientific pursuits, embracing and making use of mechanical ingenuity, in the manufacture of instruments, the X-rays, electricity and photography. What our progress will be in the future it is difficult to predict; but that the Columbia County Medical Society may grow strong and prominent in the professional advancement for the mutual benefit of its members and the public, whom we collectively represent and serve, is the sincere wish of your president.

CLINICAL MEMORANDUM.

MUSICAL EQUIVALENTS IN EPILEPSY. WITH REPORT OF TWO CASES.

By L. PIERCE CLARK, M.D.,
OF SONYEA, N. Y.;
FIRST ASSISTANT PHYSICIAN, CRAIG COLONY FOR EPILEPTICS.

EPILEPTIC phenomena that seem to be of the nature of equivalents are always interesting. Sante de Sanctis[1] has recently given the history of two epileptics in whom the attacks consisted of paroxysmal singing with complete loss of consciousness. At times such musical equivalents were accompanied with rhythmic movements of the body, with the addition of some clonic muscular convulsions of the lower extremities. At other times the equivalents consisted of singing street songs, songs of passion and religion. During these singing equivalents different erotic attitudes and movements were in evidence, and portions of the body were exhibited with impropriety.

A. Christiani[2] also reports a musical equivalent in an epileptic man twenty-two years of age. They consisted in singing a single tune, an aria or a song accompanied by rhythmic movements imitating an orchestral direction. The type of the equivalent did not change and was followed by complete amnesia.

Attacks of the musical equivalent as well-marked as these just cited are not common to the experience of epileptologists, and are sufficiently rare to warrant report when found. I believe both of the above authors were as sharply alive to the possibility of these musical equivalents being of hysterical origin as I have been in the two cases which I am about to report; somewhat similar phenomena as herein reported in epileptics are fairly common to the experience of most observers of major hysteria.

A. McD., man, forty years old. Epilepsy of grand mal idiopathic type; patient is feeble-minded. Some time after admission to the Colony and while under examination by me, he had a severe typical grand mal seizure. Some two or three days later, while sitting in my office in conversation with me, he suddenly said, "There, I feel it running to my head," indicating with his hand the seat of the sensation in the epigastric region (epigastric aura). Almost at once the patient sat up straight, then fixed his eyes on the wall over my head and began to sing a gospel tune with improvised words in a very loud voice. The quality of the singing was even better than in his normal state. The body remained rigid and fixed throughout the singing, which lasted about thirty seconds. After some twenty seconds he sung in a lower voice and with not quite the same zest as at the start; perspiration poured off the face in streams and the face became very red, apparently from the exertion of singing. The musical attack ended abruptly and the patient said suddenly, "I'm all right now," but seemed somewhat depressed. He had no knowledge of the attack whatever nor a remembrance of having spoken of the aura. Within a few minutes he became so stupid as not to be able to converse and was placed in bed. In a few seconds he was in so profound a sleep that he could not be awakened. In an hour he was up and about the house as well and cheerful as ever. He did not remember having said anything after the attack, in what appeared to be a conscious state at the time. He always looked dazed when any one asked him about these musical attacks, as though they were beyond his comprehension and were not connected with his "sickness" (epilepsy). These equivalents occur weekly; grand mal attacks occur about once per month. Occasionally he has been known to change from one tune to another; but they have all the same improvised words of a religious character, with complete amnesia.

A. B., girl, twenty years old. Epilepsy began December 16, 1898. All attacks prior to her admission to the Colony, October 1, 1899, were of the musical equivalent variety, except two, which were grand mal in type. For a long time these attacks were thought to be hysterical in character; but later were diagnosed as epileptic, and her admission to the Colony was secured forthwith. At the beginning of her disease, patient had as many as thirty or forty attacks in twenty-four hours. These attacks were preceded by the epigastric aura and a sensation of dizziness; loss of consciousness was complete in the attacks. At the end of the convulsive series, the patient always complained of feeling weak and slept for several hours. While in these singing attacks patient kept up a slight oscillation of the head and stared fixedly in space. Occasionally the

[1] Riv. quindicin. di Psicolog., etc., VI., p. 91.
[2] Riv. quindicin. di Psicolog., etc., VI., p. 129.

patient also had attacks of angina pectoris complicating the singing equivalents and existing separately from them; the combination of epileptic phenomena of musical equivalents and angina pectoris has never before been reported as existing in the same case. After admission of patient to the Colony, it was learned that several members of the patient's family had died of heart disease, and three sisters have occasional attacks of angina pectoris. Undoubtedly this hereditary predisposition determined the cardiac equivalent in our patient.

Some of her muscular attacks witnessed by me are as follows: Patient suddenly has a loss of consciousness while sitting or lying down, by day as well as night. Then the patient at once begins to sing a religious tune, sometimes improvising and sometimes following the words of Gospel hymns. The words and tune are always correct and very well rendered. Patient has a very good voice and is considered an unusually good singer for one whose voice has not been properly trained. Usually there is a good deal of bodily restlessness, during which the patient sometimes assumes a passionate attitude, and occasionally there is some arching of the back. On rare occasions patient has been partially cataleptic while in musical attack. The paroxysms of singing would generally last for twenty to forty minutes. For a day or so before the musical series she is inclined to be apprehensive and rather despondent. On the day following the series patient is bright, cheerful and industrious. During the past four months she has had anginal attacks. I have witnessed several of these; they usually begin with a premonition, consisting of sharp, darting pain in the pericardial region, followed shortly by unconsciousness. While the attack is on the patient is pale and profuse perspiration occurs; pulse is small and pupils are dilated. Usually there is no bodily restlessness, although the muscles are rigid and in a condition of considerable tension. One would think that the patient was in a condition of syncope, if it was not for the fact that every two or three seconds there are sharp expiratory cries—a sort of shrill laryngeal sound, something like the squeaking of mice or the shrill piping of the elephant. The attacks usually terminate voluntarily in one minute, although by the exhibition of nitroglycerin and nitrite of amyl the anginal equivalent seems to be cut short somewhat. There is complete amnesia following attacks. Patient does well under the administration of bromide and attacks are now much less frequent than formerly. She is an especially bright, capable girl and has no stigmata of hysteria, nor even those commonly seen in many epileptics.

MEDICAL PROGRESS.

Laryngitis and Asthmatic Paroxysm.—It is now generally admitted that asthma is a vasomotor neurosis and that the paroxysm is provoked by some peripheral irritation of the sympathetic nerve. Experience has shown W. C. Glasgow (*N. Y. Med. Jour.*, August 25, 1900) that in a majority of cases this irritation lies in the upper portion of the respiratory passages. The posterior surface of the turbinates, the interarytenoidal commissure, the posterior surface of the trachea, and the membrane at the bifurcation of the trachea have been shown to be the most sensitive areas of the respiratory tract, and it is unquestionably an irritation of one of these areas which produces the symptoms of reflex cough. The interarytenoid commissure seems to be the site most frequently affected and this can easily be treated by local applications. The constitutional treatment consists of the usual administration of potassium iodide and antispasmodics. Locally he applies carbolized iodine to the larynx and pharynx by means of a soft brush and finds it successful, partly through its anesthetic action, and also on account of its local stimulating effect.

Clinical Significance of the Diazo Reaction.—Honig (*Klin. therap. Woch.*, August 5, 1900) sums up the important facts concerning the diazo reaction as follows: (1) The reaction may occasionally be obtained in a great variety of diseases; it is found constantly, however, only in typhoid and measles and to a less degree in tuberculosis, where its presence does not by any means indicate a fatal prognosis, as has been asserted. (2) In typhoid it is probable that the typhoid toxins are absorbed through the damaged intestinal walls and are then excreted through the kidneys in an altered form upon which the reaction depends. (3) In typhoid the degree of the reaction stands in proportion to the severity of the disease. (4) Absence of reaction in typhoid is a favorable sign pointing to early convalescence; if it suddenly returns, a recurrence is to be anticipated. (5) Various drugs sometimes cause a similar reaction distinguished, however, by its less intensity and by the absence of a green precipitate.

Statistics of Bottini's Operation.—Freudenberg (*Arch. f. klin. Chir.*, Bd. LXI., p. 941) has collected reports of 683 patients operated upon for prostatic hypertrophy by Bottini's method. There were 38 deaths, a mortality of something over five per cent., but if one leaves out some deaths which were not directly attributable to the operation, the mortality would be only a little more than four per cent. In only six per cent. of the cases was the operation pronounced a failure, while in a third of the remainder it was stated that there was an improvement, and in two-thirds that there was a cure. Freudenberg uses the word "cure" in this connection to indicate that the patient was no longer obliged to use a catheter, but he has no means of knowing that all the operators who reported cases used the term in as strict a sense. But even if the figures cannot be taken too literally as showing the exact

percentage of "cures," the numbers are great enough to show that in a large majority of instances the condition of the patient was much improved. The writer gives some points which he has found to be of practical value. The bladder should be moderately distended with air strained through cotton before the cautery is passed. In cutting backward the finger in the rectum should be the invariable guide to the operator. Bottini's first practice was to leave a catheter in the bladder. Recently he has given up this practice, but Freudenberg advocates it in all cases in which there is hemorrhage, or foul urine, or in which it has been necessary to pass a catheter very frequently or in which its passage is attended with difficulty. In general he considers the operation the most important one which has been brought forward for the treatment of prostatic hypertrophy.

Tubercle Bacilli in Nasal Cavity.—On account of the prevalence of tuberculosis and the carelessness with which the excreta from such individuals are handled, it is reasonable to suppose that the atmosphere is frequently laden with large numbers of virulent tubercle bacilli. N. W. Jones (*Med. Rec.*, August 25, 1900) has published the results of numerous experiments made to demonstrate the presence of bacteria in the pharynx and nose of healthy individuals. After thorough cleansing of the nasal cavities they were washed with sterile salt solution which was subsequently injected into the peritoneal cavity of a guinea-pig. Thirty-one inoculations were made. Twenty-two died from acute pulmonic lesions of unknown origin as no organisms could be found. Three died of or with tuberculosis, nearly ten per cent. A series of experiments by Straus is also mentioned, in which, out of twenty-nine similar experiments upon persons supposedly healthy, but connected with hospitals in various capacities, the guinea-pig thus inoculated died of tuberculosis in nine instances. The author concludes that virulent tubercle bacilli are to be found in the nasal cavities of healthy persons in the ordinary walks of life, but not so frequently in these persons as in those who have the care of the tuberculous patients.

Iodipin in Syphilis.—In the advanced stages of syphilis, where iodide of potassium is indicated, Holzhauser (*Therap. Monatshft.*, August, 1900) likes the action of iodipin and is surprised at the rapidity with which gummata are brought to absorption. He injects a thick, oily fluid containing 25 per cent. of the drug by means of a special syringe with long and wide cannula introduced underneath the tissues of the back. The fluid must be warmed before injecting. Pain or suppuration has never followed this method, which affords a convenient way of saturating the system with iodine without upsetting the stomach or affecting the skin. Iodipin may also be given by mouth and patients generally prefer its taste to that of the iodides.

Transplantation of Perichondrium.—Von Mangoldt (*Arch. f. klin. Chir.*, Bd. LXI., p. 955) narrates two successful cases of the grafting of perichondrium of a rib to give support to a flap used to cover a laryngeal defect. The method of operating was as follows: A bit of the cartilage of the eighth rib an inch in length was excised, split in half and planted under the skin in the neighborhood of the defect, at such a distance from it that when a flap should later be cut to remedy the defect, this flap should contain the cartilage. The pieces of cartilage healed in their new situation without reaction, and six months later the reparative operation by means of flaps was successfully carried out. It was shown by a histological examination, and also by the continuance of the cure for more than a year, that the transplanted cartilage maintained its integrity.

Compression of Pedicle of Movable Kidney.—E. Reymond (*Revue de Chirurgie*, June, 1900) reports the case of a woman, aged thirty-eight years, with a negative antecedent history, who sought hospital treatment because of intense pain in the right flank; this had rapidly become so great that she had fever, irregular pulse, vomiting and prostration; examination revealed a swollen, distended abdomen, with an irregular, hard tumor in the region of the gall-bladder; *jaundice of the skin was absent;* on deep abdominal palpation, which was difficult, a second tumor was found, below and to one side of the first tumor, having a dulness continuous with that of the liver, and extending well down to the umbilicus and laterally to the median abdominal line. This second mass was movable, being especially displaced by deep respirations, and having a consistency more homogeneous and a form resembling that of the kidney. The absence of jaundice complicated the diagnosis, as the majority of the symptoms were renal rather than otherwise. Lumbar incision revealed a kidney, double its normal size and somewhat discolored; the hand passed about the pelvis of the kidney disclosed a tumor, hard and irregular, giving the sensation of a distended gall-bladder, which corresponded in size and location to the anterior tumor already described. Nephropexy was now performed, and a few days later a cholecystotomy resulted in the evacuation of about 60 grams of purulent fluid, and the removal from the gall-bladder of four biliary calculi, one of which was the size of an egg. The gall-bladder was drained in the usual way, and the patient made an uneventful recovery. A culture from the fluid removed from the gall-bladder showed the presence of the bacillus coli communis. The symptoms, therefore, were due to a double cause; the general symptoms were due to the gall-bladder conditions, while the abdominal pain and diminution of urine were due to the distention and displacement of the kidney.

Cancer of the Large Intestine.—R. De Bovis (*Revue de Chirurgie*, June, 1900) gives an ana-

lytical review of 426 cases, collected from all known sources. The most frequent varieties are carcinoma, epithelioma, sarcoma and lymphadenoma. Cancer of the large intestine occurs about once in two thousand five hundred cases of illness, but in hospital mortuary statistics it averages one for every three hundred deaths. It occurs more frequently in males than in females; the greatest number are seen between the age of forty and sixty years, and is rarely seen in childhood; out of thirty-five cases between the eleventh and the thirtieth year, twenty-three were females. Cancer of the large intestines is probably more frequent than cancer of the rectum; cancer of the small intestines is rare; the seat of large-intestine cancer is usually at the ileocecal region. The cause of this affection is not definitely known; heredity, syphilis, alcoholism, trauma, chronic diarrhea, habitual constipation, and dysenteric ulcers predominating as causative factors. Usually the cancer is annular in form; but seldom is it lateral; then it is apt to be a tumor of large or small size, which mechanically, by traction, favors invagination of the intestines. The annular form may be either scirrhous or colloid, generally the former; this causes a stenosis of the lumen of the gut, giving rise to an "hourglass" constriction which eventually leads to a hypertrophy and a dilatation of the intestine above the constriction, with a concomitant atrophy and narrowing of the lumen of the intestine below the strictured area. This inequality of the lumen often militates against a rapid and easy anastomosis at the time of the operation. As the disease progresses, there is evidence of adhesion to the abdominal walls, or to the abdominal viscera, *e. g.*, the pancreas, spleen, ovary, or bladder; ascites may or may not be present; suppuration is apt to occur as the cancerous ulceration extends and involves the mucosa of the intestines; thus giving rise often to the so-called vegetations found in cancer of the intestines; the suppurative process may extend, involving the walls of the intestines, then we have perforations with the usual sequelæ, peritonitis, sepsis and death. Rarely the mesenteric glands become the seat of secondary deposits, as may all other abdominal organs; the liver is, however, the most usual site of secondary deposit.

Treatment of Abortion.—The principles of treatment in abortion and its complications are, writes H. B. Stelman (*Medicine*, August, 1900), to render vulva, vagina and uterus aseptic and as far as possible to keep them so, to arrest hemorrhage either by tampon in cervix or vagina or by emptying the uterus, to remove in inevitable abortion the ovum or any part of the product of conception as early as possible, and, when circumscribed local infection is detected, to evacuate the pus early and by the shortest route. Intelligent curettage, preferably with a large sharp curette, is indicated whenever a vestige of placental decidua remains or there is suspicion of infection, and a bacteriological differentiation should be made as an aid in prognosis and treatment. After curetting, packing the uterus moderately tight with gauze stimulates uterine contraction so that any undetached decidua is separated and adheres to the gauze. Frequently curetting is not necessary and intrauterine irrigation is all that is required.

Radical Cure of Hernia.—F. D. Bird (*Lancet*, August 4, 1900) says that the typical and meritorious Bassini operation should be modified in each case to suit any conditions unexpectedly encountered; for example, the reduction of the size of the cord by the removal of some of the veins is very efficacious. In general the operation is practically an abdominal incision. The latter should be as small as possible, need not extend quite as far as the external ring, but had best go a little beyond the internal ring, thus avoiding many blood-vessels in the skin over the external ring and remaining in an area where the tissues separate readily into planes. Poupart's ligament partakes of the characters of a bony ridge for all practical purposes and should therefore be avoided. The incision should be at least one inch above it and planned as above stated. The objective point of all herniæ is the point of exit of the rupture, which in the majority of inguinal cases is the internal ring. A scar interfering with the groin fold is certainly a disadvantage and hence the skin cicatrix should be as far as practicable away from the groin. In young subjects, and especially in recent herniæ, the deep layer of superficial fascia is of importance only to furnish blood supply to the aponeurosis. Hence, instead of separating them, they had best be incised together. In old cases, and particularly in rupture of long standing, this layer will be greatly thickened and may be used as an additional support, therefore it had best be divided nearer Poupart's ligament than the aponeurosis. The division of the aponeurosis is the next important consideration. If search be made a line will be usually found along which the fibers may be separated and only the intercolumnar fibers cut near the external ring. This most important of all the structures, the external ring, should be preserved when possible. By carrying the separation of the fibers laterally to the internal ring this may often be done. Or the line of separation may be chosen above the level of the ring, but this method is less desirable. The internal oblique fibers vary greatly, being dense and close over the cords, making one wonder how a hernia ever came through; from this condition they may grow less and less until without attachment to Poupart's ligament. When possible the cord should not be torn entirely from its bed, but lifted out over the external half of the canal only sufficiently to cause tension; the sac is then brought into view and its removal facilitated best by beginning above and near the internal ring and along the lower margin of the sac.

Therapeutic Value of Urotropin.—Seppan

(*Wiener med. Blät.,* July, 1900) finds that in the cystitis of prostatic hypertrophy, in pyelitis and pyelonephritis, in atrophic prostatitis, in neoplasms of the bladder, in stricture, and in all other mechanical conditions causing a retarding of urinary flow and consequent bladder retention, urotropin is an almost infallible remedy, rendering the urine bland and relieving the local congestion. The most obstinate cystitis yields to treatment when, with the usual bladder irrigation, urotropin is administered internally. An improvement in the symptoms is noted in a few days. The usual dose of urotropin is from five to seven grains thrice daily.

Hammer Toe, Hallux Valgus and Hallux Rigidus.—Concerning the pathology and treatment of hammer toe, W. Haward (*Lancet,* July 28, 1900) raises the following points. The lesions in the order of their establishment are: Hypertension of the metatarsophalangeal articulation by contracture of the extensor longus hallucis; flexion at the first interphalangeal articulation; pressure of the ungual phalanx upon the ground; hyperextension of the distal interphalangeal articulation; hypertrophy of the soft parts and of all the joints; corn-formation upon the proximal interphalangeal articulation, now very prominent and raised high above the level of the other toes; bursa-formation beneath this corn; inflammation of the corn and the bursa by pressure attrition or traumatism; troublesome cellulitis by infection of either or both. The tendons are changed, the extensor shortened, the flexor is shortened but follows the retiring angle, the lateral ligaments are thickened and abbreviated and the joint-surfaces altered by the pressure. The toe usually affected is the second. A neurotic affection of the toes simulates this, but is distinguished by its presence in all five digits, its comparatively mild degree, and its disappearance under straightening and return when traction is removed, and its occurrence in conjunction with neurasthenia, faulty circulation, etc. Such cases are treated locally by massage, passive and active exercises, electricity, and systemically by tonic, hygiene and dietetic means. For the true hammer-toe the indications are relief of cellulitis and bursitis if present; amputation through the metatarsophalangeal joint in the bad cases, resection of the head of the proximal phalanx with removal of the lateral ligaments in the average case; division of the extensor tendon, of the lateral ligaments and of any other resisting bands in mild cases. The after management consists in proper splints, boots and exercise. Hallux valgus has these lesions, *viz.,* eversion of the great toe, partial inward dislocation of the metatarsophalangeal joint, shortening of the extensor tendon, atrophy of the joint cartilage in old cases, development of callus and a bursa over the joint, often bursitis, cellulitis, etc., added. Its best treatment is division of the tendon and excision of the bursa and the joint for marked cases, and division of the tendon alone for the recent cases. Splints, digitated stockings, pads and boots complete the process. Hallux rigidus seems to be joint fixation without ankylosis or change. Its treatment is excision of the metatarsophalangeal joint.

Doyen's Appendectomy.—A. A. Warden's preference (*Lancet,* August 4, 1900) as to technic for the removal of the appendix is what he terms Doyen's. Its details are: (1) Crushing of the base in a Doyen clamp, or any other which will occlude the lumen for a quarter-inch; (2) silk ligature about the clamp furrow; (3) cautery division of the organ and burning of the stump down to the ligature; (4) purse-string suture about the stump; (5) while this is tightened, the stump is invaginated into the lumen of the bowel; (6) secondary purse-string suture invaginating the first. The advantage of this method is that the lumen of the diseased organ is never once opened and its stump becomes part of the intestinal contents or drains into its canal.

A Case of Actinomycosis.—E. T. Jones and C. T. Mackey (*Lancet,* July 28, 1900) report the following notes: Male, forty-two years old, traction engine-driver for a threshing machine, November, 1898, stump of tooth removed, swelling followed but subsided under treatment; in December it recurred, with great pain, rapid growth, bulging into mouth and superior cervical triangle, thickening, displacement and deviation of the tongue to the opposite side, redness, induration and edema of the skin, areas of external softening here and there. The treatment was incision, evacuation, curetting, cauterization with 1 to 3 carbolic acid of the foci as they appeared, and the administration of very large doses of potassium iodide. Cure followed after a long tedious course.

A Case of Congenital Hypertrophic Pyloric Stenosis.—This condition, usually acknowledged as surgical, appears to be not very uncommon. E. Cantley (*Lancet,* July 28, 1900), who records this case, presented in 1898 a series of seventeen cases in literature, two others of his own and one specimen from the St. Bartholomew's Hospital Museum. Since then eleven others have been recorded, making the presented total of undoubted cases thirty-two. The following is the meager history: Female, three months old, died the day after admission; healthy parentage; full term, normal birth; four other living healthy children; cow's milk and barley water for the first six weeks; much vomiting; then condensed milk much diluted; meat-juice and whey for two days before admission; great constipation and occasionally small, fluid, green movements with fecal matter intermixed; emaciation. On admission, weight 6 lb. 3 oz.; convulsions; normal temperature; persistent recurrent vomiting; no bile in the vomitus; five defecations as above; convulsions recurred; temperature rose to 105° F. and death followed. Necropsy. Much emaciation, dilated, separate houses, preferably in the suburbs or

thin-walled stomach, enlarged, thickened, tumor-like pylorus, lumen admitted probe, but blocked flow from the stomach; the mucosa, as well as the musculares, proliferated, was much thickened and deeply rugose. The feature of this case is the stools. Usually these have been totally absent. The medical treatment is the use of predigested food by nasal tube and *per rectum*, while the surgical, much the better, is pylorectomy or gastroenterostomy.

Suppurative Parotitis.—A case of this disease is recorded by W. T. Beveridge (*Lancet*, July 28, 1900) because of the unusual course the pus followed, namely, below the zygoma and above it, well forward to the face, upward over the temporal area, and down behind the ear, where it began to point. Cure followed only when an exit behind the ear and another in the parotid were provided.

Hydatid of the Liver and of the Left Lung.—R. Morison (*Lancet*, July 28, 1900) says that exploratory aspiration of suspected hydatid of the lung may rupture the cyst and flood its contents over the viscus or system. This is less apt to be the case with hepatic hydatid cyst. The patient, whose history is briefly recorded, had the disease in both these viscera. Female, aged thirty years; admitted March 3, 1899, always had had a dog about the house; August, 1895, noticed pain in the right chest and shoulder with swelling, dyspnœa and dysphagia; all increased markedly in December that year; hemoptysis in 1897; August, 1898, left pleurisy developed; three days later prolonged attack of cough accompanied by a copious mucopurulent expectoration; all signs, especially in the face of the hemoptysis of the preceding year, pointed to phthisis; the liver was enlarged in the right lobe and gave the hydatid thrill. This cyst was evacuated of much fluid and many daughter-cysts on March 9, 1899. Sixteen days after this a second attack of coughing with profuse expectoration containing "grape skins" appeared. On the twentieth day exploration of the left chest with the needle gave pus. On evacuating the cavity another purulent hydatid cyst was found.

Properties in Suprarenal Extract.—The action of this drug is so rapid that its maximum effect is reached in less than one minute, and its power so great that some obstinate cases of chronic keratitis have been cured in one treatment. Because of these two qualities it is important to know the action of the suprarenal extract, when absorbed from its local use in the eye or ear, upon other organs of the body. W. H. Bates (*Jour. Am. Med. Assoc.*, August 11, 1900) reports the results of his clinical observations and his laboratory experiments, as well as those of other observers. The conclusion at which he arrives from all the data is that no condition of organic disease contraindicates the use of suprarenal, non-septic solutions being absolutely harmless. The constitutional action of this drug is that of a muscle tonic, acting especially upon the muscle fibers of the heart and arteries. Among drugs the suprarenal is unique in that while one-tenth of a grain has produced the maximum physiologic effect, two ounces produced no further effect. Physiologic experiments show that the excess of the suprarenal supplied for muscle-tissue is stored up for future use. It is important to remember that no result will follow its use unless it is indicated, and when indicated the benefit follows immediately. That is, while it acts upon and benefits a laboring heart, due either to stenosis of the valves or to insufficiency, and a dilated as well as a small heart, a pulse of high tension, a weak pulse, a rapid or slow pulse, or one irregular in force or frequency or intermittent, it does *not* affect the strong pulse of a normal or diseased heart at all. The internal administration of the drug improves the circulation when the peripheral vessels are contracted and the extremities pale, and also when they are dilated and the extremities congested. It has a selective action, the writer says, for congested tissues, as shown by the fact that in acute rhinitis the inflamed mucous membrane of the nose is whitened, after the internal administration of the drug, while the normal conjunctiva of the eye remains unaffected. The application of the aqueous solution of the extract to mucous membrane whitens the parts in one minute and a secondary dilatation of the vessels does not follow. To prepare an aqueous solution, to one part of dried powdered suprarenal in a test-tube add ten parts of a saturated solution of boracic acid and hold over a flame until it boils; then filter and boil the filtrate in its permanent receptacle. A solution prepared in this way retains its properties for months. When the drug is used locally in the form of a powder or an emulsion, the excess should be removed to prevent infection, as it decomposes quickly. In severe nasal hemorrhage, when unable to apply the drug by spray or cotton on a probe, a ten-per-cent. emulsion may be syringed by force into the nares. Do not leave tampons wet with the extract solution in the nose, as infection occurs within a few hours and causes secondary hemorrhages. It is best administered internally by placing the dry powder on the tongue and swallowing it slowly as it becomes moist. In eye and ear diseases its temporary effect may be made permanent by the use of other treatment, and so also in diseases of the nose and throat. It may be given internally, grs. v., t. i. d., in diseases of the nose and throat. Used internally and locally, it is a specific for hay-fever. It has also been used in a number of other conditions with varying success. The writer finds suprarenal invaluable in controlling hemorrhage after nasal operations. Its hemostatic properties alone make it valuable. Secondary hemorrhage is not increased by its use. Hemorrhage may be controlled by its internal administration.

The Psychic Factor in Disease.—A study of the cases occurring in one's private practice leads to the conclusion that many of them present aspects of a mentoneural relation which may be called *psychic,* although the term is somewhat objectionable. In an interesting article under the above heading Robert W. Greenleaf (*Boston Med. and Surg. Jour.,* August 16, 1900) cites briefly a few cases illustrating the following propositions: (1) That some cases of illness are simply neuroses without appreciable pathological lesions. (2) That causes capable of producing such neuroses may act while disease is present and should be guarded against. (3) Purely psychic causes, as shock, grief, etc., may pave the way for, if not directly cause, profound pathological disturbance. (4) Attention to the psychic is capable under some conditions of so turning the scale to health that it may arrest, even perhaps cure, otherwise fatal pathological conditions. (5) Attention to the psychic should be considered a routine measure in the treatment of delirium from toxic causes, as alcohol, belladonna, ether, etc. (6) Attention to the psychic should also be considered a routine measure in the treatment and in the prevention of delirium in febrile states, as of typhoid. (7) Nurses should be able to enter into psychic relations with their patients; otherwise the value of their services is much lessened and may be harmful. The writer cites cases illustrating each of these propositions and foresees one good result from the present fads of Christian science, mental healing, etc., in that they are emphasizing the importance of the psychic.

Hernia in Children.—After discussing the etiology of the different kinds of hernia which occur in children, the frequency, the diagnosis, the treatment, the results obtained, and the mortality from operation, E. A. Balloch (*Am. Jour. Obstet.,* August, 1900) draws the following conclusions: (1) Hernia is a not infrequent condition in children. (2) Of the forms of hernia, the umbilical is generally cured without operation, the femoral never, and the inguinal in from 70 to 80 per cent. of cases. (3) In view of the serious handicap in the battle of life caused by a hernia, it is justifiable and proper to recommend an operation for the radical cure in children who have faithfully worn a truss for two years without benefit or in those cases in which a truss cannot be worn. (4) The mortality from operation is less than would result from the accidents attending hernia were no operation done.

Convulsions in Children.—A convulsion is a symptom, not a disease. W. A. Dickey (*Cleveland Med. Gaz.,* August, 1900) discusses the causes of convulsions in children and their treatment. Of the exciting causes, he believes that many which are called "reflex" are not reflex at all, but direct. He says that the evolution of a tooth never *per se* produced a convulsion. At the time of dentition the child is usually stuffed with all manner of food which its undeveloped stomach is unable to digest. The result is that fermentation takes place, poisonous products are formed and absorbed, there is fever, and a convulsion occurs. Those who think that dentition is the cause of convulsions at this time, lance the gum with the result that unless the tooth comes through immediately cicatricial tissue is formed which makes the condition worse than before. Stomachic and intestinal indigestion and an overloaded colon bring about the formation and absorption of ptomains, which, circulating through the system, are followed by fever and convulsions. This autoinfection is a direct cause and the most potent factor in the production of infantile convulsions. An adherent prepuce and the presence of intestinal parasites are also causes, while in the acute infective diseases a convulsion not infrequently takes the place of a rigor in adult life. Scarlet fever is almost always ushered in with a convulsion. Other causes are considered briefly. As to the treatment of this symptom, the writer makes a plea against the time-honored hot bath which has been the recognized treatment, both among laymen and physicians, for all convulsions in children. He always takes the temperature of the child the first thing, and if it is 103° F., or more, and the extremities are not cool, the hot bath is not indicated, but harmful. On the other hand, a cool or cold sponge bath or pack is indicated. The child should be stripped and the whole body sponged with cool or cold water, or a cold pack applied, according to the severity of the fever. Or the child may be put into the bathtub in water at 80° F. to 95° F. with continuous brisk friction. A rectal injection of cold water is beneficial. The cold bath reduces the temperature, strengthens and deepens inspiration, and gives tone to the heart. All the functions are stimulated, with the result that the poisonous products are rapidly eliminated from the body. This treatment is not meant for all cases of convulsions in children, as cases of cerebral tumor, meningeal hemorrhage, adherent prepuce, etc., call for something else. Chloroform may be given during the paroxysm. The stomach-tube or an emetic should be used if undigested food is thought to be the cause. An enema of warm soapsuds will relieve the lower bowel. A little calomel should also be given. Two grains of chloral hydrate with five grains of sodium bromide may be given to a child of one year with good result.

Retrodislocation of the Uterus.—After mentioning some anatomic facts relative to the position of the uterus, R. S. Hill (*Am. Jour. Obstet.,* August, 1900) states that in his opinion the attachment of the bladder to the pelvic wall assists indirectly in sustaining the uterus, and that the character of its tissue has a tendency to prohibit an increase of its normal anteflexed position. When all the parts are normal, Nature's provisions are sufficient to prevent uterine dislocation.

The departures from normal which permit pathologic retrodeviation are: (1) Lengthening and loss of tone of the ligaments, and (2) change in the structure of the organ at or near the level of the isthmus. This change, the writer thinks, is invariably due to the retroflexion and not to lack of development. He gives the causes of retrodislocation as follows: (1) A general weakness, involving the pelvic structures, caused by faulty development or lack of maintenance of the physical forces. (2) Sudden tensions on the ligaments, as caused by jolts and jars. (3) Corsets or other constrictions around the abdomen, especially before development is complete. (4) Neoplasms of uterus or other pelvic tissues. (5) Subinvolution. (6) Endometritis and metritis, by increasing the weight of the uterus and impairing the tone of its tissue. (7) Peritonitis, by forming adhesions which draw and bind the uterus in the hollow of the sacrum. (8) Inflamed appendages falling in the posterior culde-sac and dragging on the uterus. (9) Destruction of the tone of the posterior vaginal wall, resulting in the formation of rectocele, which drags upon the uterus. (10) Inflammation of the cellular tissue and abnormal distention of the rectum and bladder. In the treatment of retrodislocation an attempt should first be made to remove the etiologic factors. The writer believes that adhesions should be destroyed, not stretched, and that the abdominal is preferable to the vaginal route. When the displacement is due to inflammation of the cellular tissue between the uterus and bladder, this condition should be overcome by repeatedly and forcibly carrying the cervix backward. For maintaining the uterus in its normal position the pessary is useful, but Hill does not think it is indicated in retroflexion. Of the methods for shortening the round ligaments he prefers Alexander's operation, which he considers an ideal operation for retroflexions, but for retroversions he believes it should be assisted by some measure which will shorten the uterosacral ligaments and thus restore their function. The writer condemns vaginal fixation of the uterine body, although acknowledging that it must be used sometimes for want of some better procedure.

Transient Spastic Convergent Strabismus.—Spastic convergent strabismus, or strabismus from tonic spasm of the internal recti muscles, is a condition to be sharply differentiated from ordinary concomitant convergent squint and from squint due to paralysis of the abducens. It is one of the well-recognized ocular manifestations of hysteria, but, apart from this, Samuel Theobald (*Bull. Johns Hopkins Hosp.*, July-August, 1900) thinks it should be regarded as a rare anomaly to which the text-books pay scant attention. He cites a number of writers on the subject and reports a case of his own. The patient was a little girl, seven years of age, who was convalescing from an attack of influenza, one of the chief symptoms of which had been persistent and severe headache. She had also had a right otitis media and some diplopia which was followed the next day by a squint. The writer saw the patient on the second or third day after the squint manifested itself. At this time there was in both near and distant visions a very decided convergent squint of the left eye. There were no signs of paresis of either rectus externus. There was a hypermetropia of rather more than 2 D. Four days later, although the mother reported that the patient's eyes had been straight at times during this interval, the writer found the squint unchanged except that perhaps there was a greater tendency to alternate. To suppress the accommodation a two-grain solution of atropine was dropped into the eyes twice a day. Two days later, the eyes being thoroughly under the influence of the atropine, the squint seemed less marked. The child was meanwhile taking iron and quinine and her physical condition was improving daily. Five days later no trace of the squint remained. There was no disposition to recur and an esophoria for distance of only four degrees was shown by the Maddox rod. After another four days, the eyes having remained quite straight, the atropine was discontinued. At the end of a week she had recovered her power of accommodation without any recurrence of the squint. Tests showed a practically normal muscle balance. Theobald concludes that the squint was purely a spastic one, due, doubtless, to an irritation (of influenzal origin) of the innervation center which controls the associated action of the internal recti muscles.

Technic of Herniotomy.—F. D. Bird (*Lancet*, August 4, 1900) believes the Bassini operation for hernia to be the greatest step toward radical cure. He emphasizes the importance of the following points: The skin incision should be short and should not extend down over the external ring into the pubic fat, for here several large vessels are found; it should be made well above Poupart's ligament and may be carried above the internal ring if necessary; to get at the external ring one may pull down skin, subcutaneous tissues, and vessels at the lower end of the wound. The aponeurosis should be split along the line of its fibers and the external ring should never be incised if it can be avoided. The left finger is pushed under the cord at the internal ring, the sac located and gently dissected by forceps from the cord. By beginning thus above, the sac is more easily stripped out and less injury is done to the vessels, nerves and cremaster muscle of the cord, and even large scrotal hernia can be manipulated in this way. The sac is tied and cut as usual. When the internal oblique makes a satisfactory muscular curtain, deep Bassini sutures are not only unnecessary but harmful, throwing the muscle-action out of gear and preventing it from forming an evenly resisting barrier to internal pressure, besides placing foreign bodies in the depth of the wound. In this operation there is very little bleeding.

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SATURDAY, SEPTEMBER 1, 1900.

THE LATEST PHASES OF APPENDICITIS.

Despite all the attention that has been given to this extremely interesting subject during the past ten years seldom does a medical meeting fail to bring out, either in the papers read or the discussions they call forth, some features of the affection that have at least an air of novelty. The last meeting of the American Medical Association was no exception in this respect. Some very suggestive contributions to our knowledge of the affection were made. More practically helpful than the formal ideas of papers and discussion was the trend of thought with regard to certain features and phases of appendicitis, as it could be noted in the course of conversations between those whose clinical experience with the affection amply justify their holding and heralding opinions of their own. It seems well worth while to give a permanent record and a wider audience to some of these suggestive thoughts, and therefore certain of them are collected here.

It seems clear that trauma plays a much greater rôle in the etiology of the disease than has been suspected. This accounts to a great degree for the fact that vigorous young men are often the favorite victims of the affection. The position of the psoas muscle with relation to the cecum and appendix is of importance in this matter because the normal function of the muscle may cause disturbances of anatomical relations and consequent interference with blood supply. Direct trauma from blows in the iliac region is frequently noted in the history of these cases. It is probable that the more infrequent occurrence of appendicitis among women is due rather to their comparative freedom from traumatic disturbances than to the supposed additional artery to the appendix in the sex, the claimed anastomotic branch from the ovarian artery. As a matter of fact the statistics of the comparative occurrence of appendicitis in the two sexes are presenting every year a less favorable showing for the female. More successful differential diagnosis between ovarian and appendicular affections are making operations for appendicitis in women much more common than formerly.

Another very interesting feature of appendicitis that is attracting no little attention is the occurrence of the affection among young children. Autopsies in cases of death among children from obscure abdominal conditions have shown in a number of reported cases appendicitis as the primary cause. The number of patients under 5 years of age who have been operated upon for the affection within this last year is quite large. The number of patients even under one year of age in whom appendicitis has been successfully diagnosed and as successfully relieved by surgical interference is already remarkable. It is undoubtedly true that many of the cases of supposed intussusception or even volvulus in the very young are really atypical appendicitis. This fact only emphasizes the doctrine that operation for serious abdominal conditions should be undertaken early and the significant symptoms should not be masked by the giving of large doses of opium early in the attack.

Finally, confidence in making the diagnosis of appendicitis even when the symptoms are not typical is gradually being developed even in conservative minds. The most perplexing confusion of symptoms results when the appendix lies upward along the ascending colon and the pain is referred to the liver region. Suspicion of the presence of a gall-stone is almost sure to assert itself as an alternative diagnosis. At the present time, however, recurrent pain from a gall-stone is an indication for operation. When there is a suspicion that cannot be lulled that appendicitis may be present and not a gall-stone, the necessity for an exploratory operation at least is greatly emphasized.

EVOLUTION AND ALCOHOL.

There has been a very prevalent idea among moralists and reformers that to catch the devil's tail and give it a tweak is a signal triumph of progress. Alcoholism, or the "Vice of Intemperance" as the temperance reformers call it, has called forth more of such heroic feats than any of the allied excesses of the sexual or criminal instincts; partly because it is even more widespread, and partly because it is more openly seen and discussed.

But the general opinion of the public and even of many medical men concerning the possibility of eradicating the evils of alcoholism is based upon a false theory as to the physiological cause of the condition. Most of the religious temperance reformers refer the intoxication impulse back to the sinful nature of man, or to an inherited taste or "craving," from which relief can be found in a higher power. These hypotheses are so unmerited and indefinite as to be unworthy of consideration.

From the medical profession come varying hope-denying and hope-giving theories of cause, such as a diseased appetite, the effect of an alcoholized protoplasm, a pathological perversion of physiological cell-action in the cerebral cortex, a specific pathological craving which can be cured by a specific remedy. All these but tread on the tail of the adversary. They do not explain, nor do they help the situation.

The truth lies not in any one cause upheld by Christianity, pessimism, or quackery, but in many, from which it is difficult to detect the true from the false.

One of the best discussions of the subject that has recently appeared is by George E. Partridge in *The American Journal of Psychology* for May, 1900, entitled "Studies in the Psychology of Alcohol." He has gathered facts about the intoxication impulse as it is felt and as it expresses itself in the form of motor activity. Avoiding abnormalities, he has examined the forms of intoxication, its periodicity, and its physiological effects in primitive peoples, in civilized races, and in animals, with the result that he finds no evidence that animals appreciate the state of intoxication or acquire a craving for alcohol, while among primitive peoples the use of intoxicants is very general, although primitive man is not a steady nor an habitual drinker. His intoxication is likely to be periodic and is generally connected with religious or social occasions, and is apt to be characterized by great excess and uncontrollable excitement. The conclusions reached by all observers are that the higher the degree of civilization, the greater the abundance and variety of stimulants used. It is the low classes of civilized society that drink to excess, because they have less control, and it is the men that drink more than the women because the latter have less desire for the effects of stimulation.

The writer has made a study of sixty-five cases of inebriety, most of whom were men confined in criminal institutions or were voluntary patients in inebriate asylums, for the purpose of determining the nature of the craving for intoxicants as felt by the inebriate. The results of testimony show that the craving for alcohol is a rather unimportant part of the intoxication impulse. Nearly all said that after a few days, generally about ten days, there was no longer any craving for alcohol, especially when it was impossible to obtain it. In short, the popular idea of the "craving," under psychologic analysis, resolves itself into a nervous, restless sensation which any strong excitement would satisfy, and is seen chiefly in neurotic cases. The evidence from these cases indicates that the craving for drink is not a craving from childhood, nor is it hereditary, although popular belief in that fact and in the organic nature of the alcohol habit makes the drunkard lose hope and often takes away the possibility of cure. The craving in fact is not a craving for alcohol but a craving for the mental state it produces; and the desire for it, as literature and observation show, is caused by a desire for pleasure and abandon and a desire to escape from physical or mental pain. All description of intoxication in the literature of the ages, from that of Greece to the modern French novel, resolves itself into one of these two primary motives. In either case there is a strong impulse to escape the bondage of ennui, poverty, monotonous occupation, or mental, moral or physical pain, and find relief in an intense and primitive state of consciousness. This may be obtained in several ways, but evolutionary selection has given alcohol the evident preference.

Dr. Partridge sums up this evolutionary theory in the words, "The intoxication impulse is not a physical craving nor a specific impulse, but it is one form of expression of a general instinctive tendency which has developed in the race as an aid to mental growth. It is an instinctive expression of surplus energy."

The author, basing the causes of intoxication

upon psychic rather than physical phenomena, suggests that the cure of intoxication lies along the same line. The change of environment that suggests the desire for abandon, the easing of conditions of pain and worry, and, above all, the will that decides to control the impulse, are the largest factors concerned in cure.

ECHOES AND NEWS.

NEW YORK.

Death from Sulphonal.—A dose of 400 grains is said to have resulted fatally.

Dr. Herold Sues.—Dr. Justin Herold has brought suit for $100,000 damages against the Metropolitan Street Railway Company for injuries received through the colliding of a Second Avenue electric car with a horse-car of the Eighty-sixth Street crosstown line, upon which he was a passenger, on May 31st. Dr. Herold's leg was crushed in the collision.

Death from Tetanus.—Charles Borrman, eight years old, died in the Seney Hospital, Brooklyn, August 28th, of lockjaw. Two weeks ago while playing in a vacant lot near his home a sliver entered his right foot. It was pulled out, but four days afterward, as the wound seemed about to heal, the first symptoms of the disease developed.

State Medical Association's Directory.—The New York State Medical Association has issued its annual directory for New York, New Jersey and Connecticut. The directory contains the official list of the pharmacists registered in the city of New York, an alphabetical index of all the physicians in the three States, and a fund of information about hospitals, medical societies and benevolent institutions.

Obituary.—The Rev. Dr. John S. Breckinridge, the superintendent of the Methodist Episcopal (Seney) Hospital in Brooklyn, died August 28, 1900, at Churchill Hall, Stamford, Conn., where he had been for about a month. He was born in Pennsylvania sixty-three years ago, and entered the New York East Conference in 1861, after graduating from Wesleyan University, Middletown, Conn., in the class of that year. He served as pastor of several Methodist churches in Brooklyn, and was at Simpson Church, Brooklyn, when appointed as superintendent of Seney Hospital, a Methodist institution. He continued to fill the position successfully until his death. It has been through his unceasing efforts that the Hospital has had such a successful career. He leaves a widow, son and daughter.

Dr. Frank Stephen Milbury, a specialist in diseases of the eye, ear, nose, and throat, died August 29th at his home in Brooklyn. Dr. Milbury was born nearly forty-four years ago in the Province of New Brunswick. After taking the common school course he first studied dentistry. He practised for some years in Nova Scotia and in the City of Mexico, after which he studied and graduated in general medicine and surgery. He then went to Vienna and studied the special branches to which he devoted the last ten years of his life. While studying abroad Dr. Milbury traveled extensively in the Orient. After leaving Vienna he studied in the clinics of Stuttgart, Edinburgh, London, Paris, and in Berlin under Prof. Koch. Dr. Milbury married Miss Anna Schoeps of Breslau, Germany, who is now in Europe. He left no children.

A City for Sick Animals.—Dr. H. H. Kane of 138 W. 34th Street, New York City, member of Society for the Prevention of Cruelty to Animals, is seeking to arouse public sentiment to the point of securing by purchase an old farm, with plenty of pasture, where worn-out horses and other animals may be taken care of and may spend the last days of their lives. For this purpose he has just issued a small pamphlet entitled "Jack," containing notes of the proposed plan with descriptions of the dog cemeteries of Paris and of London. Lovers of pet animals and of the horse are asked to subscribe to the "Little City of the Dead and the Horse Haven," by which title he proposes to dedicate the farm.

Christian Science and Insanity.—Miss Myra Andrews, thirty-two years old, a dressmaker, was removed to Bellevue Hospital, August 27th, violently insane. It required the combined efforts of Drs. Stewart and Sheldon, of Flower Hospital, two policemen and the ambulance driver to get the woman into the ambulance. Miss Andrews became ill a week ago. She had some time before that taken up the study of Christian Science and had practically accepted it as her faith. When her illness came she resolutely declined to call a physician or take medicine.

To Isolate Consumptives at Bellevue.—The completion of the new insane ward at Bellevue Hospital, this summer, has relieved the somewhat crowded condition of that institution during the construction of the new building, and given Commissioner Keller an opportunity further to carry out his plans for the isolation of all phthisis cases brought into the hospital. When Commissioner Keller began to build the new insane ward, about eighteen months ago, it was found necessary to use the alcoholic ward for the temporary confinement of the insane patients, as that ward was the only other building at all adapted for such purposes. The patients in the alcoholic ward were then transferred to the building known as the phthisis ward, and the consumptive patients, here, had to be shifted as best they might to temporary wards in the main building. Under these conditions the staff and nurses of the hospital were compelled to labor for over a year, but now the insane patients are in their new ward, the alcoholic patients back in their old quarters, and the phthisis ward is being

scrubbed and cleaned preparatory to its occupancy again by the consumptives. Next February the hospital on Blackwell's Island will be relieved of its insane patients, who will be apportioned among the different State hospitals near the city. Then Commissioner Keller intends to make this into a general isolation hospital for cases of consumption under the care of the Department of Charities. In so doing he will also further relieve Bellevue by placing the present phthisis ward at its disposal for other work.

PHILADELPHIA.

Dr. Elwood R. Kirby.—The Mayor has appointed Dr. Kirby a member of the Department of Charities and Correction.

Philadelphia Hospital.—Dr. H. W. Cattell, Pathologist, and Dr. J. C. Seltzer, Laryngologist, have recently resigned.

A Midwife's Record.—Mrs. Mary James of Edwardsville celebrated her fiftieth anniversary as a midwife August 22d. During that time she has assisted at the birth of 4700 children. She is the mother of fifteen children.

Health Report.—Deaths in the city for the week ending August 25th were 372, a decrease of 128 from those of the previous week and of 34 from the corresponding week of last year. There were 26 deaths from cholera infantum and 7 from sunstroke. Contagious diseases: Diphtheria, 37 cases, 9 deaths; scarlet fever, 18 cases, 3 deaths; typhoid fever, 61 cases, 9 deaths.

CHICAGO.

Banquet to Dr. Fenger.—November 3d a banquet will be tendered to Dr. Christian Fenger on his birthday. It will be national in character, and as a token of respect to Dr. Fenger it will show that his services are highly appreciated by his colleagues, as a surgeon, rendered to his profession and to humanity. The committee having charge of the affair are Drs. William A. Evans, W. L. Baum, and J. B. Murphy.

Professor of Physiology in Chicago.—Dr. George P. Dreyer, Ph.D., Associate Professor of Physiology in the Johns Hopkins Medical School, has just been elected full professor in charge of the physiological department of the College of Physicians and Surgeons, the medical department of the University of Illinois, Chicago. This college was recently established, and Dr. Dreyer has spent the summer purchasing an outfit of apparatus and supplies for the physiological laboratory. He will assume the duties of his new position on October 1st. Dr. Dreyer has been connected with Johns Hopkins for the last ten years. He received his A.B. in 1887, and was fellow in biology in 1889 to 1890.

Grand Army of the Republic.—The medical arrangements for the Thirty-fourth National Encampment of the G. A. R. are under the direction of Dr. T. J. Robeson, late Major-Surgeon, First Illinois Cavalry, U. S. V.; Dr. Arthur R. Reynolds, City Health Commissioner, and J. F. Hultgen. These gentlemen will be assisted by 150 physicians, who will be assigned to meet all trains containing soldiers. They will visit quarters free morning and evening. A temporary hospital has been arranged for in the Keith Building, which is the medical department headquarters. Field hospitals provided with ambulances will also be stationed at various points along the line of march to care for cases of emergency

Modern Medical Healers.—John Alexander Dowie's exclusion from the United States under the immigration laws, on the allegation that he was once convicted of crime in a foreign country, New South Wales, is being sought by a Chicago attorney, and others who were formerly identified with the "Zion" movement. Mr. Stevens has begun the circulation of a petition directed to Terence V. Powderly, Commissioner of Immigration, seeking the permanent separation of Dowie from his flock. The General Overseer of the Christian Catholic Church is at present in England, where he is inspecting lace manufactories in preparation for installing a similar plant at his proposed city of Zion near Waukegan. Thence he is to go to Palestine. The precedent suggested for Dowie's exclusion is found in the recent refusal on the part of Commissioner Powderly to allow Fitzharris and Mullet, convicted of the Phœnix Park murders, to land at New York. Dowie is not a naturalized citizen of this country, although he has lived here ten years.

GENERAL.

Professor Virchow's Golden Wedding.—Professor Rudolph Virchow quietly celebrated his golden wedding, receiving numerous congratulations on August 24th. He announces his intention to attend the German military maneuvers next month.

Cases of Plague at Glasgow.—Three persons (father, mother and child) who are suffering from bubonic plague have been placed under the care of the medical authorities August 27th. On August 28th, it is reported that the outbreak of bubonic plague in Glasgow is more serious than was thought at first. Another death has occurred and ten families have been removed to the reception house for observation.

Havana's Yellow Fever.—The Surgeon-General of the Marine Hospital Service reports that from August 1st to August 26th there have been 204 cases of yellow fever reported at Havana and 34 deaths. Many of the cases were very mild. There were eleven new cases on August 27th. On account of the mildness of the cases and their short duration the Surgeon-General has wired to all the quarantine stations on the Atlantic and Gulf coasts advising special care in inspection to detect mild cases.

Cholera in India.—The present epidemic of cholera is reported to be one of the worst outbreaks on record. The bubonic plague is child's play compared with it. The natives are said to be dying like flies, at the rate of three thousand a week. The epidemic is undoubtedly due to the pollution of the scanty water supply during the famine.

Mrs. Dr. Wright Dead.—Mrs. Dr. Wright, a midwife, had a hospital at Gilman, Ill., in which a young girl died. Dr. Wright was accused of being responsible for her death, and a warrant was issued for her arrest. The woman, however, defied the authorities and opened fire from her windows on the policemen sent to apprehend her. In the fighting that followed and in which a large mob took part, one of the defenders of the house was killed and Dr. Wright, herself, shot.

The London Underground Electric.—London's "Two-Penny Tube" has been recently dubbed "The Refrigerator" by reason of its coolness, and London medical men are interesting themselves as to the effects of the sudden cooling of the body which the lowered temperature brings about. Fortunately the surface temperatures in London are not as excessive as they are in New York or the variation in temperature would produce more serious results.

Sickness of American Horses.—Dr. I. P. O'Connor, veterinarian to the British Army in South Africa, will leave New Orleans in a short time to continue his studies of the peculiar disease that has broken out among American horses in Africa and that is causing such heavy losses. It attacks the horses from this country and does not seem to trouble the native stock. The belief is that the disease is a kind of malarial fever. It is slow and debilitating and soon pulls the victim down to skin and bones. It is the newest thing in veterinarian circles. Dr. O'Connor believes that the disease is similar to pink eye or acclimated fever. The British War Department has sent some of the ablest veterinarians, Americans as well as British, to South Africa in the hope of solving the problem and finding a cure for a malady which is causing it a loss of $1,000,000 a month for horses.

Obituary.—Dr. Ferdinand E. Chatard, a prominent physician and surgeon of Baltimore, died at Atlantic City on Monday evening. Dr. Chatard belonged to a distinguished French family. His granfather, Dr. Pierre Chatard, and also his father, were eminent surgeons. Dr. Ferdinand Chatard was educated at Mount St. Mary's College, Emmittsburg, and was graduated in 1861 from the Maryland University of Medicine. He also studied several years in the universities of Europe. Upon his return to Baltimore he became associated with his father in practice, and made considerable reputation in obstetrics. He was a leading member of the Maryland Medical and Chirurgical Faculty and the Academy of Sciences. Much of his time was devoted to charitable work, he being President of several institutions. His brother is the Right Rev. Francis Silas Chatard, Bishop of Vincennes, Ind., and his sister, Juliana Chatard, of the order of Sisters of Charity, at Troy, N. Y. Another brother is Dr. Thomas M. Chatard of Washington. Dr. Chatard leaves a widow, two sons, and one daughter.

Prof. Henry Sidgwick, professor of moral philosophy at Cambridge University since 1883, died August 29th. He was born in 1838.

Prof. F. W. Nietzsche died August 26th at Weimar of apoplexy. For the past ten or fifteen years he has been insane.

Smallpox in United States.—The spread of smallpox continues throughout most of the States. Up to the present time there have been reported 3346 cases of this disease as compared with 805 cases reported during the same period of time in 1899. The increase is particularly notable in Alaska, Colorado, Indiana, Louisiana, Minnesota, Texas, North Carolina and Ohio. These last two States show a marked increase. In North Carolina, from May 1st to June 30th, 440 cases were reported, as contrasted with 68 during the same period of 1899, while during the first six months of 1900 Ohio has reported 1353 cases, contrasted with a total of 20 cases for 1899 during the corresponding months.

The Mosquito.—The Department of Agriculture is about to issue a bulletin prepared by Dr. L. O. Howard, United States entomologist, on the mosquito of the United States. It discusses their structure and biology and indicates the difference in all stages of existence between the kinds of mosquitoes which transmit malaria, and those which do not, and also discusses the subject of remedies. About 250 species of mosquitoes are known, of which only about thirty have been found in the United States. The bulletin says that since the recent opening of the gold fields in Alaska, and the great influx of miners and traders a knowledge of the abundance and ferocity of the Alaskan mosquitoes has become widespread, the Government surveying parties in starting for Alaska for their summer's work are in the habit of consulting the Department for mosquito-bite remedies. Mentioning the reputation of New Jersey in connection with mosquitoes, the bulletin says there is a constant carriage inland from the marshy coast of very many mosquitoes, the railway trains seeming to be the most important mode of conveyance. Many of the cars contain mosquitoes by the hundreds. In this way even mountain resorts will get their supply of lowland mosquitoes, and with the improvement of railway service, and the increase in the number of through cars, the danger is constantly increasing. The source of supply to distant points where mosquitoes are ordinarily rare is thus kept up. The report also says that of the remedies in use in houses, the burning of pyrethrum powder and the catching of mosquitoes on the walls

in kerosene cups are probably the best, next to a thorough screening and mosquito bars about the bed. The remedies for bites mentioned are glycerine and household ammonia.

Red Cross Aid for India.—The first work taken up by the American National Red Cross under the powers conferred upon it by the last Congress will be for the relief of the famine sufferers in India. To avoid delays and to prevent complications with the reorganization, which will now be carried on at National headquarters in Washington, Miss Barton has placed the India famine work in the hands of a committee, with headquarters in New York City. This committee is now ready for active operations. It has selected for its headquarters Rooms 903 and 904 in the Presbyterian Building, 156 Fifth Avenue. At 9 o'clock in the morning these rooms will be opened for work—the first relief work of the new Red Cross. The committee has selected as its depository of funds the North American Trust Company of 135 Broadway, to which all contributions should be sent direct. Checks should be drawn to the order of the North American Trust Company, and marked "for the Red Cross India Famine Fund." In its new form the Red Cross will establish permanent auxiliaries in all parts of the United States, with branches in Cuba, Porto Rico, and the Philippines. It will be ready at a moment's notice to send trained and experienced relief agents to any part of the world where the relief of suffering may be needed. It will be ready, also, to receive and forward money and supplies in cases where trustworthy agents, such as missionaries and consuls, are on the ground in sufficient force to undertake relief administration.

Preventive Inoculation for the Plague.—Dr. A. Calmette, director of the Pasteur Institute, of Lille, in a paper read at the International Congress of Hygiene and Demography, 1900, says: Since the work of Roux, Yersin, Calmette, Borrel, Salimbeni, and Haffkine the efficacy of the preventive inoculations, whether by antipest serum or by cultures of the bacillus pestis killed by exposure to 70° C. for one hour, can no longer be doubted.

We know that the serum confers an immunity, certain and effective, almost immediately after the injection. This immunity is, however, unfortunately of very short duration; it rarely exceeds twelve to fourteen days. It is therefore necessary, in using the antipest serum as a preventive, to inoculate 10 cc. of the serum every two weeks in order to insure protection. This method has both its advantages and its disadvantages.

The advantages are: (1) It confers an immunity almost absolute and immediate. (2) The injection of the serum is not painful, and is therefore readily accepted, even by children. (3) It is never harmful. (4) The serum, when it is prepared antiseptically, is a product whose activity remains intact a very long time, almost indefinitely. The disadvantages are: (1) The very short duration of the immunity. (2) The cost of producing the serum and the difficulty of obtaining it in sufficient quantity in order to vaccinate the population of an entire city every fourteen days. (3) The difficulty of making obligatory or even of inducing a majority of the population to accept a vaccination which must be repeated so frequently. These disadvantages are of such a nature as to limit, to a great extent, the employment of the serum as a prophylactic. Its use is, however, indicated under the following circumstances: (*a*) On board of infected vessels during the voyage to prevent the disease spreading among the passengers or crew. (*b*) In order to immunize the personnel in the lazaretto as well as those concerned with the unloading or disinfection of merchandise brought by suspected vessels or vessels having had cases of plague on board. (*c*) In the docks, warehouses, and stores where suspected merchandise is sometimes handled. (*d*) In times of epidemic, to the immediate protection of persons found in contact with the sick and who may be already infected. The method of vaccination by cultures of the bacillus pestis killed by heat at 70° C., applied on a very large scale by M. Haffkine for the past three years in India, possesses the undoubted advantage of conferring a much longer immunity than that produced by the antipest serum.

The Plague.—The *Englishman* of Calcutta, as reported by the *British Medical Journal*, gives a summary of a resolution, extending over some 25 pages, which has been published in the Home Department on the chapters of the India Plague Commission dealing with the measures for the suppression of plague. Every aspect of the question is fully dealt with, and the main conclusions appear to be as follows: The Government of India thinks the obligation of private persons and medical practitioners to report cases of sickness can be relied on only in very exceptional circumstances, and that house-to-house visitations are justifiable only when plague exists in small well-defined areas. The Government agrees with a surveillance over persons arriving from infected areas, and believes this means has been freely resorted to in rural areas, but does not favor the system of rewarding informers of plague cases. It publicly thanks the many volunteers who devoted themselves to the work of fighting the plague, and thinks the expense of special reporting agencies are fully compensated for by their success. Much attention is devoted to the question of corpse inspection, but on a review of the whole case the Government considers the compulsory examination of bodies a very unpopular measure and its object as likely to be defeated. With regard to the compulsory removal to hospitals the Governor-General accepts the conclusions of the Commission, but desires that the removal should be compulsory only in places and under circumstances when it can

be an effectual precaution. The removal of moribund patients is prohibited. Government agrees that the segregation of contacts should be abandoned as ineffective and harassing, except where special conditions are stated by the Commission to enable it to be carried out. The complete evacuation of villages and small towns when attacked is believed to be the most effective safeguard against the spread of the disease yet discovered. The question of disinfection is dealt with at length, and Government considers the Commission's advice generally excellent. Government and the Commission are in accord with the precautions taken regarding the annual pilgrimage to the Hedjaz, but the examination of the passengers from one infected port to another is now ordered to cease. With regard to the examination of railway passengers, all local governments are desired to report on the question of reducing the inspection stations, as from an economical point of view it is highly desirable now to maintain only those which are absolutely necessary; and, acting on the advice of the Commission, all disinfection stations maintained on the railways are ordered to be closed. The detention of ordinary passengers because they come from infected areas is also prohibited. The stoppage of booking passengers is regarded as a wise precaution and will continue. The shutting up of people in infected houses and prevention of their movement from an infected area by means of a cordon or other means is condemned. Finally, Government expresses its recognition of the careful and sympathetic manner in which the Commission has examined the difficult problems, acknowledges its valuable advice, and feels confident that the local governments will be able to benefit therefrom.

India.—The returns for the week ending July 21st show for all India only 198 deaths from plague. Of these, 84 occurred in Calcutta, 70 in Bombay city, 10 in the Bombay Presidency exclusive of the city, 20 in the Mysore Province, and 12 in Bengal, exclusive of the metropolis. Ahmedabad and Karachi have been declared free of plague. The fall in the death-rate from plague is, however, annulled by the great increase in mortality in Bombay from cholera.

Hong Kong.—During the week ending August 11th 29 cases of plague occurred in Hong Kong and 28 deaths from the disease. It is fortunate that plague is unknown in the neighborhood of Peking and at Shanghai, where the allied troops are concentrating. Newchwang, a Manchurian town, said to be held at present by the Russians, is the only place where plague has been reported from in all the wide district of China north of Foochow in which the troops are operating.

Mauritius.—For the week ending August 9th, 6 fresh cases of plague are reported in Mauritius, and 3 deaths from the disease. It would appear that a recrudescence of plague has begun in Mauritius, for it is only a few weeks ago that we were able to report that there were no cases of plague in the island.

Constantinople.—The ten days' quarantine imposed upon all arrivals from Smyrna has been reduced to forty-eight hours.

Hamburg.—The steward of the British steamer Rosario, who was suffering from plague, died August 10th. At first it was thought this man was suffering from typhus fever, but subsequent bacteriological investigation proved the disease to be plague. No other person has been attacked by the disease, and it is hoped that in consequence of the strict precautionary measures which have been taken in Hamburg further spread of the disease will be prevented.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, August 18, 1900.

ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION—THE ADDRESSES—INFLUENZA AND THE NERVOUS SYSTEM—SUBDIAPHRAGMATIC ABSCESS—NOTIFICATION OF PUERPERAL FEVER.

THE sixty-eighth annual meeting of the British Medical Association was held in the historic East Anglian town of Ipswich, famous as the birthplace of Cardinal Wolsey. The meeting was better attended than the last one, held at Plymouth, but the number of members present—about 600—was not as large as might have been expected. The excursions, receptions, entertainments, and other social functions were as usual well carried out. The scientific proceedings, while not without interest and value, cannot be said to include any very remarkable contributions to science or orations which were great literary efforts. As most of these have appeared in the MEDICAL NEWS further comment upon them is unnecessary.

Dr. Judson S. Bury (Manchester) opened a discussion on "Influenza as It Affects the Nervous System." He referred to the diversity of the symptoms of influenza in different epidemics and in different persons which made the constructions of a scheme of the symptoms very difficult. Four types could be recognized according to the organ chiefly affected, *viz.*, (1) the mucous membrane; (2) the gastrointestinal tract; (3) the heart; (4) the nervous system exclusively. In all forms the nervous system was profoundly affected, as evidenced by pain in the head and back, which was seldom absent, hyperesthesia, delirium, and depression. When ordinary nervous symptoms were absent others could be found, such as undue dyspnea in pneumonic cases, tachycardia and brachycardia (which were essentially nervous) in cardiac cases. He recognized two chief groups of nervous affections following the disease—those of the febrile stage, such as meningitis and encephalitis, and those arising later, probably due to a less virulent toxin, and in which visible degeneration of nervous matter might be discovered, yet in many cases was not

found. In the first group he distinguished a comatose and a delirious type. The former was very serious and often ended fatally. He quoted two cases. Post-mortem meningo-encephalitis was found with endarteritis of the vessels of the pia mater. Other results of influenza were cerebral embolism, thrombosis, and abscess. The delirious form was common in children. The cord might be attacked with the brain or independently. Generally it was affected after the initial attack, but sometimes during it. Every known form of nervous disease of brain, cord, or nerve, had been reported as the result of influenza. The peculiarity of the influenza toxin as distinguished from the diphtheria toxin was that it affected nervous tissue haphazard and not in groups.

Mr. Rickman J. Godlee (London) read an important paper on "Subdiaphragmatic Abscess," which he said is not a disease but a by-product of some other disease. None of the symptoms is pathognomonic. In the early stages there might be hiccough, a stitch in the side, and friction. Much benefit in diagnosis may be derived from the careful use of the stethoscope. The doses might give rise to dulness in the lower chest and be accompanied by cardiac displacement. It may be diagnosed from pleurisy by the fact that the chest movements are not impaired; that the upper limit of dulness is not well defined, and that respiration may be heard below this limit. In emaciated persons the lower border of the right lung can frequently be seen ascending and descending, which is quite against the presence of pleurisy. If gas is present (subdiaphragmatic pneumothorax) the bell-sound may be obtained. The tympanitic note may reach as high as the second rib, yet thoracic respiration may not be interfered with. The causes are (1) gastric, rupture of an ulcer with localized suppuration; (2) intestinal, rupture of duodenal or colonic ulcer; (3) appendicitis; (4) suppuration of hydatids of liver or spleen; (5) hepatic abscess; (6) peripheral abscess; (7) subcutaneous injury (rupture of a preexisting ulcer was produced); (8) wounds; (9) metastases; (10) caries of the ribs; (11) thoracic suppuration spreading downward, (12) various causes, actinomycosis, tuberculosis, peritonitis, and disease of the pancreas.

Dr. Berry Hart (Edinburgh) read a paper on "Puerperal Fever in Relation to Notification." Referring to the difficulty of definition of puerperal fever, which was put forward as an objection to notification, he said that cases should be notified when the clinical features of general or threatened pyemia are present; sapremic conditions and localized septic pelvic conditions need not be notified. The advantages of notification are that it would show the frequency of the condition and that it helped in prevention by putting the medical officers on the track of careless midwives or nurses. Notification, however, is of little value unless accompanied by provision of hospital accommodation and isolation in bad cases. The speaker does not believe in the origin of puerperal fever from "drain-poison," so ably advocated by Dr. Playfair.

THE ETIOLOGY OF TEXAS FEVER DISCOVERED BY AMERICANS.

To the Editor of the Medical News:

Dear Sir: There appeared in the Medical News of July 28th a short paragraph in the "London Letter" referring to Dr. L. W. Sambon's contribution to the *Journal of Tropical Medicine.* The part that has prompted me to write to you is the sentence referring to Drs. Smith and Kilborne. It says: "Smith and Kilborne have proved by experiment that the common cattle-tick is the agent whereby the red-water or Texas fever is transmitted to cattle." This statement, appearing as it does in your "London Letter" and in connection with the work of a European, will naturally give the impression to those not acquainted with the work of these men that they are also Europeans, and that the credit for this work belongs across the water, while the facts in the case show this to be one of the most important discoveries made by the United States Bureau of Animal Industry.

Under the direction of Dr. D. E. Salmon, Chief of the United States Bureau of Animal Industry, Dr. Theobald Smith and Dr. F. L. Kilborne, both connected with this Bureau, began in 1888 to investigate the cause of Texas fever in cattle and carried it on more or less continuously until 1891, when is was definitely proven that the Texas cattle-tick, *Boophilus bovis,* carried within its body a protozoal micro-organism, called the *Pyrosoma bigeminum,* which is introduced into the blood of cattle when the tick attaches itself to the animal, thus producing the disease known as Texas fever, Southern cattle fever, splenic fever, or red-water fever of cattle. This is the only way in which this disease is transmitted. Remove the ticks and you remove the source of infection from any diseased animal. As a result of the discoveries of these men, the Secretary of Agriculture of the United States issued an order February 26, 1892, creating a line across the United States from the Atlantic to the Pacific, known as the quarantine line, and all cattle bearing the *Boophilus bovis,* or Texas tick, are prohibited from coming north of this line, except during the months of November and December for immediate slaughter, and then only under quarantine supervision until killed. This is to protect Northern cattle from this disease, and, to show that it is effective, Texas fever is now not known North of the quarantine line. There is now a serum or antitoxin which promises to prove successful by inoculation against this disease. I write this explanation so that the statement quoted above may be more clear and the credit for this great work fall where it justly belongs, *i.e.*, to the United States and not to Europe.

Samuel G. Hendren, V.M.D.,
U. S. Inspector, Bureau of Animal Industry.
Indianapolis, Ind., August 15, 1900.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

SYPHILITIC DIARRHEA—SYPHILITIC BONE LESIONS—INTESTINAL INVAGINATION—ORTHOSTATIC ALBUMINURIA—TYPHOID FEVER AND OYSTERS—PANCREAS IN DIPHTHERIA—NEW CULTURE FOR GONOCOCCI—GELATIN INJECTIONS IN ANEURISM—COCAINE AND MIDWIFERY—TUMOR OF THE FLOOR OF THE FOURTH VENTRICLE—DIONINE AS A LOCAL ANESTHETIC—PRIMARY HYDATID UTERINE CYST—CYSTIC MASTITIS—OPERATIVE ASEPSIS AND ANTISEPSIS—NEW OPERATION FOR PILES—METHYLENE BLUE AND THE PLEURAE—ADENITIS IN CHRONIC PLUMBISM—GONORRHEAL OSTEOPERIOSTITIS, APPENDICITIS AND THE BACILLUS PYOCYANEUS.

AT the Académie de Médecine on July 3, 1900, LEREBOULLET mentioned a case of obstinate emaciating diarrhea, persistent for eighteen months and resistant to all the ordinary medical means. The patient was thirty-eight years old, had contracted syphilis eight years previously and suffered from general diffuse adenitis. He was put upon rapidly increasing antisyphilitic measures, with the result that the glands diminished and the diarrhea soon ceased. Although gastroenteric troubles are rare in tertiary syphilis, the rapid favorable reaction to the antispecific treatment leaves little doubt as to the cause in this case.

FOURNIER said that although gastroenteric symptoms in syphilis are very rare, they make up a distinct class of case and are indisputably important. He had himself seen a few dozen instances. Not only has this condition been established from a clinical standpoint with definiteness, but also from the anatomopathological, because patients known to have been the victims of syphilis at autopsy show miliary gummata, plague-like infiltrations, ulcers and scars of ulcers. After ruling out tuberculosis, specific lesions alone remain. The diagnosis can be established on the following basis: A history of syphilitic infection, the absence of the ordinary other causes of chronic diarrhea, the presence of physical evidences of syphilis; the therapeutic results of antisyphilitic treatment. The mixed treatment is the better, but often iodide of potassium is enough. One fact must be borne in mind, namely, that this manifestation of the disease may be very late in its appearance.

ZAMBACO (Constantinople) exhibited a large number of photographs of skulls and bones collected in Egypt showing various osseous changes. These he endeavored to show indicated the existence of syphilis and tuberculosis twenty-five centuries ago.

FOURNIER said that this conclusion was fallacious, because so many simple causes may set up chronic periosteo-osseous lesions closely like syphilis, for example trauma may cause exostosis, while varicose ulcer may set up periosteal and then bony thickening.

LANCEREAUX, July 10, 1900, gave the details of a case of aneurism cured by subcutaneous injections of gelatin, which was the first of his series to come to autopsy and the first to undergo the injection treatment. In November, 1898, the patient entered the hospital with a mild attack of the grip from which he recovered completely and was about to leave the hospital when he was found dead in bed one morning. Death had apparently come through heart-failure such as one expects in aneurismal and aortic disease. Since the gelatin treatment is addressed solely to the aneurismal pouch, one cannot expect the arterial disease to be reached by it. No injection had been practised on this man later than two months previous to his disease. The report of the post-mortem examination contains the following facts: Normal thoracic and abdominal viscera; no general arterio-sclerosis; aortic sclerosis of advanced degree with plaques, confined to the thoracic portion; normal abdominal aorta; an aneurism, the size of a child's head, situated 3 cm. beyond the valves connected with the vessel-channel by an opening 3.50 cm. in diameter, extending forward, having eroded the sternum and ribs and thinning the skin, beneath which pulsation had been very marked, so that it consisted of a subcutaneous and an intrathoracic chamber each packed with old blood-clots in such a way as to be impermeable to the blood-current. Previous to the gelatin injections this patient had been subjected to diet treatment, prolonged rest in bed, ascending doses of iodide of potash and repeated bleedings. Nevertheless, the aneurism continued to enlarge and its symptoms increase, threatening to break through the skin at almost any time. Then the injections were begun, and almost the next day after the first the size decreased, the pulsations lost their emphasis, and the pains ameliorated. Repeated injections cured these symptoms altogether. For a year he did his work to fatigue and remained well. A few relapses occurred which were cured in the same way. The lesion was apparent in two auxiliary pockets filled with more recent clot. The conclusions of this case are (1) that no case of aortic aneurism can be cured by rest in bed, notwithstanding the support of this method so fervently and recently given by Litten (Berlin); and (2) that subcutaneous injections of gelatin repeated, according to the case 25 to 30 times, are needed to promote thorough clotting in the sac and cure.

BARRETTE communicated a case of hydatid cyst of the uterus treated by incision, evacuation and drainage. A young woman of twenty-one years, after a fall and blow upon the abdomen, noticed sudden steadily progressive enlargement of the abdomen. These features determined an operation. The tumor was regularly ovoid, smooth, elastic and situated below the umbilicus. At the operation through a median incision a smooth uterine tumor presented in the wound. The organ was brought up into the field and opened over the prominence of the swelling. Thick yellowish fluid was

evacuated and a mass of ovoids, flabby, and looking like half grape-seeds. About three and one-half quarts were voided. Dissection of the walls was not possible because the cyst-membrane was so intimately blended with the uterine muscle. Therefore the cavity was thoroughly curetted, cleansed and sterilized, and the margins of the uterine and abdominal wounds were united and four drains carried into the depths of the wound. Recovery was uneventful. The cyst receded. The drains were removed on the eighteenth day. The histological examination showed many withered daughter-cysts and hooklets, showing a hydatid cyst of the uterus.

Doleris, at the session of July 17th, rehearsed observations by Malurtic and himself on the effects of cocaine during parturition. Five cases were concerned in his report. In all injections of one or two centigrams of cocaine into the arachnoid cavity produced total anesthesia of the lower segment of the body after a delay of five to ten minutes and for a period of one and one-half to two hours. The uterine contractions were more frequent, efficient and prolonged; in the intervals a semi-contracted state of the organ persisted (which constitutes a contraindication of the use of the drug for versions and similar procedures); the uterine contractions were absolutely painless; hemorrhage after delivery seemed no greater; and the effect of the drug upon the child appeared to be *nil*.

François-Franck read in behalf of Marinesco (Bucharest) a note on a case of gliosarcoma of the floor of the fourth ventricle. At first the mass involved the urinary center, set up a marked diabetes insipidus, and later, extending and effecting the glycosuric center, produced a diabetes mellitus. The lesson the pathological condition teaches is that the bulbar respiratory center is not at the point of the calamus scriptorius, as enunciated by Flourens, but more deeply situated in the bulb.

Darier narrated a case of iritis with violent crises of pain which were controlled quickly and thoroughly by one to two drops of a five-per-cent. solution of dionine. His conclusions are that the local effects of this drug are such as to make it a good substitute for morphine in cases of deep and acute ocular pain, as occurs in iritis, iridochoroiditis, glaucoma, etc.

Michaux, at the Société de Chirurgie, June 27th, reported for Auvray a case of intestinal invagination in a male, twenty-nine years old, believed to have appendicitis. The intussusception occurred in the ileocecal region and was easily reduced. Prompt complete recovery followed. He then continued by noting three cases of his own in adults, as follows: The first was in a case diagnosticated ulcer of the stomach with perforation. The intussusception was in the upper jejunum into itself, caused by a polypus and necessitating resection of the invaginated bowel. The union was imperfect, a breach in the intestine occurred and death followed. The second case simulated appendicitis. A resection here in the ileocecal region was followed by complete recovery. This patient was a female, twenty-eight years old. The last case was in a woman fifty-six years old, caused by a lipoma. A resection and union by a button did not seem to promise well. An artificial anus was made, but death followed. Here the lesion was in the sigmoid.

Reclus reported a case in the service of Faure which had been caused by a polypus. The intussusception was reduced and the polyp ablated, but recurrence of the former occurred four years later, the bowel became gangrenous, eighty centimeters were resected, but death supervened in ten days.

Reclus at the meeting of July 4th stated that his position as to cystic disease of the breast is always highly conservative, especially if there were any question as to the diagnosis. If, however, there seemed likelihood of there being a neoplasm he always performs early and wide excision.

Delbet added that, since cystic mastitis is very likely inflammatory in its origin, surgical interference should be avoided, except in cases where the development is very rapid and the deformity positively considerable.

Tuffier said that the tendency which this disease has to cancerous degeneration is worthy of note and should affect the treatment.

Walther was of the opinion that on principle a cystic breast should be left alone, but on the other hand pain might make interference a necessity.

Nelaton said that many cystic breasts in his own practice had not been operated on at the outset but that he had found it necessary later. Nevertheless he would hesitate to pronounce this disease benign.

Segond contributed a case operated on for indisputable cancer after fifteen years' treatment for cystic breast and a second case in which an early operation for cysts of the breast had been followed by a recurrence with small multiple cysts. These were punctured. For five years there had been no recurrence.

Lejars claimed, in discussing operative asepsis, that it is possible to do abdominal surgery although caring for septic cases. Still he considered gloves an essential in septic cases, although they may be dispensed with in clean cases. For two years he had followed this plan and is convinced that it offers the best results. By extraordinary care in cleansing the hands it is possible to go without them, but in the long run probably their use is advisable.

Reclus remarked that in the recent report on this subject by Bazy and Delbet no minute had been made of how long the hands had been exposed to the infection and how soon after it the sterilization had been done. This last point appeared to him very important because the sooner the disinfection the better the chance of good results.

Guinard held fast to the principle that for septic operations gloves must be worn. Certain cases, however, require a very delicate touch and in these repeated washing of the hands seemed indicated and sufficient. To have a double set of assistants, one for clean and the second for pus cases, seemed a good plan but is almost unnecessary and often impossible.

Poirier, in preference to any other, uses much soap as a protective in rectal, vaginal, buccal and other septic examination procedures.

Potherat described a new method of operating for piles, devised by Dupraz (Geneva). After freeing the musosa as in the method of Whitehead, it is secured to the skin by four sutures, opposite each other in pairs. Flaps are then made centered on the sutures and in order to secure perfect coaptation tubes of Girard (Berne) are used. The other steps of the operation are the same as Whitehead's.

Delbet, resuming the subject of operative asepsis, at the meeting of July 11th, said that in four instances he had taken cultures from the skin of the patient just before beginning to operate. In three no growths were found. In the other cultures were obtained, but this case he had not himself scrubbed. Again, he wrapped his arms in thick sterile bandages to provoke the greatest possible sweating for five minutes. Then cultures were taken by scraping the skin. Thus far all his tubes had remained sterile. So far as he had gone he held the opinion that the field and the hands of the operator may be fully sterilized even after contamination. It seemed, therefore, likely to him that the dust of the air is often the source of infection.

Lucas-Championniere said he is convinced that it is very difficult but not impossible to sterilize the skin. His method is good penetration of the soap and an efficient antiseptic solution. Bichloride of mercury he considers less penetrating than a five-per-cent. solution of phenol. To the latter he pins his surgical faith and can acknowledge only one calamity. Two days after attending a case of puerperal tetanus he inoculated a patient with tetanus during a laparotomy. Antiseptic procedure, he claims, is much better than aseptic and thinks his position is borne out by the records of his services.

Pierre-Uerklen, at the Société des Hopitaux, June 29th, said, in a discussion of Archard's paper on orthostatic albuminuria read at the previous session, that the condition cannot always be ascribed to the persistence of slight infectious nephritis, although Archard had given this hypothesis such cordial support. Not every deficiency of kidney function or variation in the permeability of the organ must depend upon organic lesion. In the same manner not every functional derangement of the heart, stomach, liver, etc., rests on essential pathological changes, but on accidental, often non-assignable troubles. During twenty years of careful observation of this condition, no autopsy had ever set down a cause. Like its course, its source is little understood. As a rule under proper hygiene, healthful diet and living and advancing age, the albuminuria tends to subside and then leaves the patient absolutely normal. Occasionally in conjunction with a true infectious nephritis the disease may continue, but it is the infectious factor which determines this.

Archard said he could not imagine an albuminuria without some degree of lesion. True functional derangement of the kidney seems improbable.

Millard then reported an instance of a perfectly sound child, never having had severe sickness, yet suddenly overtaken by albuminuria, slight at night, distinct by day. The case appears as a typical orthostatic albuminuria.

Renon reported the results of studies by Latron and himself on the permeability of the diseased pleura for methylene blue. After having become satisfied with the health of the kidneys, the coloring matter was injected into the pleural cavities of two patients having pleurisy, serofibrinous with effusion. The blue appeared very promptly in the urine, showing that the pleura, although inflamed and producing an exudate, was still an absorbing surface. The peculiarity is that in one case the excretion lasted nine and in the other three days and seemed to depend somewhat upon the relation between the resorption of the effusion too. It was previously established that neither case was tuberculous.

Rendu said that the condition of the lungs determines the rate at which absorption and resorption by the pleura occur. If the lungs are inflamed or congested these functions are in abeyance or checked; if normal then they proceed promptly.

Chantemesse stated that he had two cases of enteric fever in patients who did not use boiled water, but who traced their infection supposedly to oysters. One had eaten them eight, the other seventeen days before the invasion. Although this source could not be definitely established, the speaker considered these cases to indicate danger in certain oyster-beds.

Renon made remarks on a case of chronic plumbism with the feature of localized inflammation of the submaxillary salivary glands. Often enough one finds a plumbic parotiditis with conjoint infection of all the other salivary glands or localized in itself. Here, however, he had to deal with inflammatory involvement of the submaxillary itself. The symptom came on in the midst of other chronic symptoms, colic, catarrh, and paralyses, and, in fact, was an accompaniment of an attack of colic. Under suitable treatment the enlargement disappeared in twenty days. Its character was a hard, slightly lobulated, painless, not tender, movable tumor. In the absence of inflammation of the mouth-flow and of the duct orifices the source of disease seemed to be systemic.

Hirtz, at the sitting of July 13th, presented a

young woman, who after an attack of gonorrhea set up a specific arthritis of the right knee. Examination showed later, after the subsidence of the acute process, great thickening of the lower end of the femur and head of the tibia. The radioscope showed the site of the disease to be chiefly periosteal and its extension to be the inner aspect of the extremities of both bones.

Girard and Gillain, at the Société de Biologie, June 30th, stated that in twenty-nine autopsies on children dead of diphtheria examinations for pancreatic lesions were made and the following results obtained: There was no hemorrhagic pancreatitis; but frequently congestion, arterial and capillary, endo- and periarteritis and endophlebitis, all usually about the acini; generally no lesions of the connective tissue stroma or of the bodies of Langerhans. In this way the pancreas appears to escape the damage so frequently marked in the liver, kidneys and suprarenal bodies, and the explanation seems evident of the fact that in diphtheria symptoms of pancreatic insufficiency are absent, namely, glycosuria, lipuria, and fatty stools, as the chief signs.

F. Bezancon and Griffon have been carrying on experiments with the gonococcus in blood and gelose as a culture medium. They find that blood combined with gelose makes a most excellent soil for these cocci, giving at the end of twenty-four hours round, flat, transparent colonies, of dimensions varying with their number, at a temperature of 37° C. From these colonies the cocci can be recovered at the end of twenty-four hours in their typical morphological characters and not apparently broken up into grains, as so often occurs if other media are employed. The longevity of the germ in it is also great. Six months was the longest life of it during their observations. All these facts make this a very fine culture medium.

Coyne and Hobbs, at the July 7th meeting, reported a case of appendicitis in which the infection was mixed bacillus coli communis and bacillus pyocyaneus. The latter were highly virulent after injections in rabbits; the former not at all.

SOCIETY PROCEEDINGS.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

Held at Paris, August 2-9, 1900.

(Continued from page 315.)

Section on Internal Medicine.

Fifth Day—August 7th.

Tobacco and Valvular Heart Lesions.—Dr. Eid of Constantinople reported a series of cases in which valvular heart lesions developed in persons who used tobacco to excess. No other cause could be found. In one of the cases the patient scarcely ever had the mouthpiece of his Turkish pipe out of his mouth. In another the patient lighted the next cigarette always with the butt of the one he had been smoking. All of the patients were confirmed inhalers. Where valvular lesions have not been demonstrable in certain patients, marked irregularity of the heart's action and some impurity of the sounds of the heart have been noticed. Tobacco heart lesions, in Dr. Eid's experience, always occur at the aortic orifice and seem to be the result of a degenerative process beginning in the arterial system. Drs. Rendu of Paris and Brochard of Marseilles reported similar cases.

Heart Lesions in Arhythmia.—Prof. Huchard of Paris said that there is an irregularity and palpitation of the heart which is not due to any cardiac lesion. It may last for years without the occurrence of a single other symptom and without any fear of an untoward event. This is usually either a reflex gastrointestinal episode due to the fact that the vagus is distributed to the stomach and intestines as well as the heart, and as a result irritation of one branch may be reflected to the terminal filaments of another branch; or it may be due to mechanical interference with the heart's action by a distended stomach. When the cardiac arhythmia comes on suddenly without warning and then grows progressively worse, it is due to cardiac sclerosis. This is usually the result of systemic arteriosclerosis invading also the coronary arteries and affecting the heart muscle itself. This is especially the palpitation of the elderly. It may become painful, give rise to angina pectoris and end fatally.

Cardiac Palpitation and Sclerosis of Auricles.—Dr. Merklen of Paris said that in a number of reported cases in medical literature, where palpitation of the heart had been complained of in life, at the autopsy sclerosis of the auricles, especially of the left, was found. It was the existence of this lesion that made the use of digitalis dangerous in palpitations of the heart. The drug should not be used to steady a cardiac palpitation unless the physician is reasonably certain that this lesion does not exist. In palpitation from stomach dilatation digitalis scarcely has a place.

Danger of Digitalis.—Dr. Huchard said in the discussion that digitalis is usually contraindicated in palpitation. If the irregularity is functional and due to the gastrointestinal tract, treatment should be directed to that. If the cardiac arhythmia is due to cardio-sclerosis digitalis is positively dangerous. In Dr. Huchard's experience sclerosis of the auricle has had no special connection with arhythmia of the heart. In some of the cases after death auricular sclerosis was noted; in others it was not.

Dr. Hewitt of London said that not only lesions of the heart itself but also of the pericardium may give rise to papitation of the heart. The adhesion of the pericardium to the heart causes an irritability of that organ which easily leads to irregularity of action. This is especially

the case if an overdistended stomach should further interfere with the heart's action.

Serum Diagnosis of Tuberculosis.—Dr. Arloing of Lyons said that in over 50 cases of incipient tuberculosis he has been able to recognize the presence of a tubercular lesion by serum diagnosis after Widal's method before it could be recognized by physical signs, or at a time when all other means of diagnosis left one in doubt.

Dr. Blumenthal of Berlin, Prof. Leyden's clinical assistant, said that the method of serum diagnosis of tuberculosis had been tried in Prof. Leyden's clinic at the Charité, Berlin, and that the results obtained confirmed those of Dr. Arloing.

Serum Diagnosis in Animals.—Dr. Arloing said that the early diagnosis of tuberculosis is most important, because the eventual cure of the disease depends on the treatment being begun as early in the case as possible. The use of tuberculin is considered by many to bring with it a certain amount of risk. Hence the desirability of some other method. In order to substantiate the claims made for the serum diagnosis method it was tried also on animals. In over 70 cases it proved to be correct except in a single case. It is a question whether this case may not have been one of those cases of pseudotuberculosis in which all tests fail and in which even the tuberculin test fails, though this is accepted as practically infallible now by veterinarians all over the world.

Tuberculin for Early Diagnosis.—Dr. Bernheim of Paris said that tuberculin had now been used by so many physicians in so many different countries that there could no longer remain any reasonable doubt of its inoffensiveness. For very early diagnosis of incipient tuberculosis no method equals the injection of tuberculin for ease and accuracy. The tuberculin method would be much more used than it is only for the haunting fear that lurks in many minds as to its dangers. If employed in incipient cases this danger does not exist. If a patient is having night-sweats and rapid pulse with some rise of temperature in the afternoons, even though the physical signs in the lungs are as yet dubious, it is evident that there is no need of applying the tuberculin test.

Differentiation of Pleurisy.—Prof. Widal of Paris read a paper in which he pointed out a method of differentiating the various forms of pleurisy by a microscopic examination of the pleuritic effusion. He called attention to the importance of this subject because so frequently what seems to be a simple pleurisy is really of infectious origin. His method he calls that of cytodiagnosis, *i. e.*, cell diagnosis, and he uses it also for the differentiation of exudates in joints and other serous cavities in the body. A few cubic centimeters of the pleuritic exudate are defibrinated and centrifugated. The cellular sediment is stained with thionin, with eosin, and with Ehrlich's triacid stain. The pleuritic exudate from what is called idiopathic pleurisy or pleurisy from cold is characterized by the almost exclusive presence of small lymphocytes that tend to run together and a few red blood-cells. It will be remembered that Prof. Landouzy has shown that this form of pleurisy is nearly always tuberculous. In old tuberculous cases the effusion is different from that just described. It contains only a few cells, old and degenerated polynuclear leucocytes mainly, sometimes traces of the detritus of broken-up red blood-cells. In the exudate of a serofibrinous pleurisy due to the streptococcus there are only some polynuclear neutrophiles to be found. Pleurisy due to the pneumococcus gives a profound impression of a struggle between the invading microorganisms and the pleura cells. Its effusion is characterized by the presence of a few red blood-cells and scattered lymphocytes. Many polynuclear cells occur. A characteristic cell that is seen in less numbers than the polynuclear cells is a large mononuclear lymphocyte of endothelial origin which contains not only microbes but polynuclear cells within its substance. Mechanical pleurisies which come on during heart disease, or in the course of Bright's disease, or cancer, or from pressure, or local irritation, are characterized by the presence only of large endothelial cells which have fallen from the surface of the pleura. These occur singly or in pairs, at times in groups of three or four and these groups make it easy to recognize this form of pleurisy. Of course this is the case only when the pleural cavity remains perfectly aseptic. In rheumatism the joint-fluid during an acute attack contains many polynuclear neutrophiles, which shows that rheumatism is surely infectious, though cultures made on all ordinary media remain in cases of uncomplicated rheumatism constantly sterile.

Creosote Treatment.—Dr. Savoire of Paris said that the treatment of tuberculosis by large doses of creosote is the most effective treatment. It should be given in doses as large as the patient will bear. The toxicity of the sputum soon becomes diminished, as has been demonstrated by a series of animal experiments. In animals with experimental tuberculosis the course of the disease is much modified by the use of creosote.

Spread of Tuberculosis in Stores.—Dr. Savoire spoke of the special parts of stores which seem to retain the infectious material and from which successive employees are infected.

Cacodylate of Soda.—The use of this drug is attracting much attention, and Dr. Savoire has found it useful in conjunction with creosote. It should be given by rectal injection.

Sanatoria.—The present duty of the medical profession is to encourage the foundation of sanatoria as much as possible and send patients to them at the earliest possible moment after the diagnosis of tuberculosis is made.

Dr. Herard of Paris said that it must always be borne in mind that it is not the air, rest, and feeding at a sanatorium that alone do good. These

measures will fail unless they are taken under the direction of a physician. It is the following of the proper rules for each case under constant medical control and encouragement that have given the good results so far secured in the sanatorium treatment of consumption. The element of medical superintendence is the essence of the treatment.

Heredity and the Pretubercular Stage.—Dr. Papillon of Paris called attention to the fact that the family history can be of assistance in recognizing the preliminary stage of tuberculosis. In families with a neuropathic history the beginning of the tuberculosis is often in the form of a pretubercular neurasthenia. In families where gastric troubles are frequent the preliminary stage of the tuberculosis often consists of a series of dyspeptic symptoms. In the same way in rheumatic families there are often arthritic symptoms. In a word, the toxin of the bacillus of tuberculosis always affects parts having a lowered vitality whether from heredity or acquirement. By remembering this fact a very early diagnosis may often be made.

Section on Surgery.

Third Day—August 5th.

(Continued from page 318.)

Vesico-Rectal Anastomosis.—Dr. Frank of Chicago read a paper with this title and showed post-mortem specimens from a series of experiments on dogs done within this last two years. In his early experiments he implanted one or both ureters in the rectum after a method of his own, but found the kidneys infected every time. Then he tried joining the bladder to the rectum with success, and without subsequent renal infection. He described the operation as done with his own absorbable bone button. He expects this operation to be found useful in certain cases of ectopic vesical and bladder troubles generally.

Hernia.—Dr. Phelps of New York said that in 1892 he became thoroughly convinced that the reason why relapses occur in hernia, and why herniæ so frequently follow abdominal operations, is because the scar tissue stretches after the operation. To obviate this he introduces a continued suture of fine silver wire which becomes encysted and remains so during the natural life of the patient. He contends that one of the serious mistakes made by all operators is the ligation of the sac. He claims that frequently after ligation retraction of the peritoneum takes place, leaving a large surface varying from ¾ to 2 inches in diameter, which is not covered by the fibrous tissue intended by Nature as the support of the abdominal walls. He cuts off the sac and finishes the operation as any other abdominal operation, stitching up the peritoneum and transversalis fascia with a continued suture of silver wire. Over the transversalis fascia a mattress of fine silver wire is placed and the deep layer of muscles stretched over it with a continued suture of silver wire. A small glass drainage-tube is inserted down to the wire mattress for the purpose of drainage. If a large hernial opening is to be closed, and there is very much attenuation of the muscular coats of the abdominal walls, a second mattress of wire is placed between the deep and superficial layers of muscles. The cord is brought out from the inguinal canal external and superior to the internal abdominal ring. A notch in the aponeurosis of the muscles prevents strangulation and the cord lies directly under the skin in its course to the scrotum.

Inguinal Hernia.—Dr. Gerard of Berne said when the hernia is small or only medium in size, the majority of the procedures recommended by the different authors will give favorable results. But when the hernia is large and the inguinal canal obliterated it is difficult to make a wall strong enough to resist a relapse. On this account the author has modified the Bassini operation as follows: He opens up the inguinal canal, if it still exists, from the upper part of the external ring. He removes and closes the sac after treating the contents according to indication. He stitches up the internal oblique and the transversalis after the manner of Bassini. He turns in the two edges of the external oblique about 4 cm., superimposes the superior on the inferior or vice versa and stitches them together. He gave statistics of 543 cases treated in this way. In this number he has had but 8 relapses, four of which followed suppuration of the site.

Phonetic Apparatus After Laryngeal Operation.—Dr. Gluck of Berlin demonstrated such an apparatus on a patient. It was connected with a silver tube in the trachea by means of a rubber tube, and consisted of a small metal box made like a larynx. When talking the patient held this box before the lips and talked over the top of it. Though by no means perfect, it was interesting to see a process just the reverse to that which we normally practise. We articulate first and form the words afterwards with our lips and tongue. In this case the formation of the words seemed to be primary to the articulation of the sound.

Fourth Day—August 6th.

Antisepsis versus Asepsis.—Dr. Bloch discussed more especially the treatment of wounds in general and said that though all surgeons at once fell into the antiseptic treatment of Lister it was only natural that they should look for new antiseptics that would prove better than carbolic acid. It was this search for better methods that brought about the aseptic treatment. Yet the speaker insisted that the results with this method do not recommend it; on the contrary, all the clinical work done since Lister's discovery shows that every wound should be treated as if infected and therefore with antiseptics and drainage. Moreover, he contends that no better antiseptic than carbolic acid has been discovered. Finally, he

expressed great doubt as to the value of serumtherapy, especially that of antistreptococcic serum, and of internal antisepsis in general.

Dr. Lejars of Paris said that this question of the treatment of infected areas was essentially one of practice; that no theoretical doctrine should be at all considered. In recent years the treatment of infected areas has served as a theme for numerous experimental and bacteriological researches. The problem being complex it is necessary to study it from different sides: (1) Recently infected areas where the infection as yet remains local, or better, perhaps, recent wounds supposed to be infected. This presumption ought to be extended to every accidental wound, because as a matter of fact surgical wounds themselves are far from being free from microbes. Moreover, we have no means or recognizing in a recent wound whether the microorganisms are virulent or not. Therefore every accidental wound at least ought to be treated as an infected one. Now, what shall be the treatment? The primary thing is mechanically to clean the wound as well as possible, but to respect the integrity of living cells that they can aid us by their reaction of defense. To accomplish this cleansing, sterile water with sterile sponges is the best, though it is not always the nature of the liquid employed so much as the manner of its employment that gives the results. Antiseptic solutions sufficiently diluted so as not to injure the cells of the part have no better effect than sterile water. The dressing should be aseptic, absorbent, protective, and should immobilize the part in a manner applicable to different regions, and for a variable time. (2) Infected areas where the infection is evidenced by local or general reactions more or less marked. Here also two possibilities must be borne in mind, recent infection without suppuration and with suppuration well developed. In either case specific serumtherapy is indicated. This is the natural scientific method, and is the principal one of the future. Unfortunately, it has not yet reached anything like perfection. We possess now only the antitetanic and the antistreptococcic sera; the former has furnished results only sufficient to entitle it preventive, the second is limited in its application. In certain cases of putrid suppuration or gangrene, oxygenated water, which seems to have a powerful effect on anaerobic organisms, will be a valuable resource, the efficaciousness of which has been proven. (3) Infected sites accompanied by severe general symptoms, traumatic septicemia. In this again specific serumtherapy should be employed. But local treatment, which should be rational in accordance with the preceding principles, should not be neglected. Moreover, the natural resistance of the body should be enhanced.

Surgery of the Lung.—Dr. Murphy of Chicago said that the day had passed when the chest was to be treated differently, as to its surgical aspect, from any other cavity in the body. For years it has been an axiom to open up an abscess wherever it might be, even in the brain; yet the surgeon stopped at the lung and dared not enter. He claimed what all surgeons feared was collapse of the lung when the chest was opened, but from experiments on animals he has proved that this is easily avoided. The principal factor in respiration is the creation of the vacuum by the movement of the diaphragm downward; now when the right chest is opened, this vacuum on the left side instead of causing the left lung to expand, brings about a deflection of the mediastinum toward the left side causing collapse of the left lung. The speaker said if the mediastinum toward the left side causing collapse of tion, the collapse would not take place, making the operation a perfectly safe one. He advocated therefore that the lung be treated surgically the same as any other organ.

Ligation of Aorta.—Dr. W. W. Keen of Philadelphia reported a case in which this operation was performed for an aneurism of the abdominal aorta. The ligation was made just below the diaphragm. The patient made a good recovery from the operative procedure itself, being up and around the ward. The aneurism began again to pulsate, probably from reestablished collateral circulation. Forty-eight days after the operation the patient died. The autopsy showed an ulceration of the aorta, due to the ligature, and secondary hemorrhage. Dr. Keen reviewed the twelve other reported cases. In all death had supervened by reason of secondary hemorrhage or direct operative causes. The tugging at the elastic wall of the aorta probably induces the ulceration. Murray's method of preliminary aortic compression is worthy of consideration.

FIFTH DAY—AUGUST 7TH.

Gastrointestinal Anastomoses.—This subject was discussed by a large number of surgeons. The first report was made by Prof. Roux of Lausanne. Experimentation on dogs does not give a true idea of the operation on man. As to the operation, lateral anastomosis is the most practical. Intestinal anastomosis is contraindicated when the state of the patient is such as to permit only an enterostomy. It is to be done in the case of numerous adhesions when it offers greater chances. It is the operation of choice in inoperable tumors and in certain cases of inflammation when the inflammatory foci (as actinomycosis) are multiple and inaccessible. Gastrointestinal anastomosis precedes pylorectomy as a preliminary operation if the condition of the patient renders it at all necessary. It replaces pylorectomy if the tumor is inoperable. In order to give the patient the benefit of a radical operation when possible, or a complete palliative one if a relapse of the tumor should occur, the new pylorus should be made as far away as possible from the old one. In non-cancerous affections of the pylorus and the stomach on account of which a new pylorus is desirable, gastroenteros-

tomy is preferable to pylorectomy and pyloroplasty because it is easier and as efficacious. To a good operator suture is preferable to any instrumental contrivance. Still the Murphy button, the best of the automatic couplers, finds a favorable place in these cases, where minutes are to be counted.

Dr. Souligoux of Paris said that intestinal anastomosis constitutes the principal or at least the complementary operation in all cases of cancer or stricture of the intestine. In case of acute intestinal obstruction the intestinal anastomosis ought to be secondary to the preliminary creation of an artificial anus. In a case of an adherent tumor, or one the removal of which would complicate seriously the operation, the only thing to do is intestinal anastomosis. Lateral anastomosis is always more simple, rapid and sure than circular entororraphy. In cicatricial stenosis of the pylorus or of the first part of the duodenum gastroenterostomy is the operation of choice, since it is almost without danger and since by it the patient may return to an excellent state of health. In stenosis of cancerous origin it is also most often employed, though pylorectomy is to be preferred in those cases where the cancer is only beginning, and is not attached to the liver, pancreas, colon, or preaortic ganglia; and even in these cases the gastroentero-anastomosis will be complementary to the pylorectomy. In case of progressive ulcer of the stomach, gastrojejunal anastomosis will be found useful, not to stop the hemorrhages, but to put the organ at rest and allow cicatrization of the lesion.

Murphy Button.—Dr. Murphy of Chicago had been announced to speak on ileus, but the complete discussion of intestinal anastomosis led him to give a few facts in relation to the button brought before the public by him eight years ago. He presented to the section a statistical list of 1620 cases in which the button was used. These cases including all kinds, malignant and non-malignant, acute and chronic, gave a mortality of 19.3 per cent.; 166 non-malignant cases showed a mortality of 2 per cent. He claimed that before the days of the button the lowest mortality was 30 to 40 per cent or higher, and that the first great drop in this mortality came with its introduction. He agreed that it was a little injudicious to leave a foreign body in the gastrointestinal tract over which the operator had no control, but he could not believe in absorbable buttons until they could be so managed that they would not be absorbed before Nature was ready to do without them. In some cases there is union at the end of three or four days, in others not for ten days or even longer. He was at present experimenting with a button made of magnesia and tempered with aluminum which he was not yet ready to put on the market. This button is not absorbable by the gastric juice, but may be made to dissolve by means of alkaline waters.

Forceps for Intestinal Anastomosis.—Dr. Laplace of Philadelphia demonstrated his forceps for employment in intestinal anastomosis. The method offers the following advantages: (1) Rapidity and accuracy of suturing without leaving any foreign substance within the gut; (2) an absolute control of the field of operation by means of the assistance of the handles of the forceps; (3) the facility with which the forceps are applied, preventing the escape of intestinal contents during the operation.

Dr. Doyen of Paris spoke of different methods of anastomosis and advocated as most scientific the Laplace forceps.

Isolation of the Appendix.—Dr. Ochsner of Chicago said that the vermiform appendix is located anatomically in a position in which it is easily isolated from the general peritoneal cavity. When inflamed the omentum at once surrounds the appendix and if left in a condition of rest, the elimination from the general peritoneal cavity is accomplished and the worst possible result is a comparatively harmless circumscribed abscess. The danger of disturbance of this condition comes from the peristaltic motion of the small intestines. This can be eliminated by giving the patient absolutely no food of any character and no cathartics by mouth until all acute symptoms have disappeared for at least four days, by removing whatever contents there may be in the stomach by gastric lavage and by employing exclusive rectal alimentation, making use of some concentrated predigested liquid food. This does not make operative treatment of appendicitis unnecessary but it changes a very unfavorable acute into a very favorable chronic condition. Extensive clinical observations support this form of treatment.

Transplantation of the Stomach.—Dr. Ullmann of Vienna detailed a number of cases in which he transplanted the stomach of young pigs into different parts of the intestine. The animals stood the operation well and though he stitched the stomach into the small intestine, the cecum and even the colon, digestion went on without apparent disturbance of function.

Pyloroplasty.—Dr. Segale of Genoa advocated in case of stenosis of the pylorus, when it is non-malignant, pyloroplasty by a new method. Instead of resecting the valvular portion of the stomach he makes a curved longitudinal incision from some distance, above the pylorus, through the pylorus and some distance below it. He now slides this incision up on itself and stitches it. This is so accomplished that the pyloric valve takes a spiral turn, so that an opening is left along the spiral.

Resection of the Rectum.—Dr. Jonnesco of Bucharest said that he had done resection of the rectum and pelvic colon by the abdominal-perineal method, accompanied by emptying of the pelvis for cancer of the rectum four times resecting 30 to 40 centimeters of the intestine, with two cures and two deaths. One of these died of peritonitis on the fifth day, the other of cardiac

collapse the day of the operation. Moreover, both cases were the extremes of what might be called operable cases, one on account of the great extent of the cancer, the other on account of profound cachexia. This operation is superior to all others because it assumes in operable cases the removing as far as possible of the chance of relapse and again it reduces the danger of the operation to a minimum. Admitting that removal wide of the tumor is the only rational radical treatment for cancer, it is necessary to resect the rectum entirely and have recourse to an artificial anus, and of all such it is incontestable that the iliac is the best.

Epididymo-testicular Tuberculosis.—Dr. Mauclaire of Paris said that since the publication of his first report last April he had done several new operations, and could give now the results of 18 cases. These results can be summed up as good, satisfactory, and bad. Good results, that is, atrophy of the whole infected mass, were obtained in all cases without suppuration or fistula. In the second category are those cases in which atrophy came about slowly; in one of these a fistula developed which was cured after four months. In the third class are those that were already suppurating and continued after the operation to infect the surrounding tissue, making necessary a second interference. From these results he believes the operation ought to take a place among those for epididymo-testicular tuberculosis. The operation is very simple, consisting simply of a double ligature of the cord and section between them.

Torsion of the Spermatic Cord.—Dr. Nanu of Bucharest reported one case that came under his notice in which the diagnosis was made certain by castration. Classical works make but little mention of this accident, and for this reason and the difficulty of making a diagnosis persuaded him to report the case. He believes that anatomical defect is necessary in its causation, probably most frequently on arrest in development of the testicle.

Nephrorraphy—Dr. Biondi of Sienna after insisting on the difficulties, etc., of other operations detailed his procedure. Having cut down on the kidney he puts it back in place and fixes it there by a pad of gauze placed in front of the organ. He then packs in gauze around the kidney in zigzags and allows it to remain for seven or eight days, when he removes the whole and permits the wound to heal. The cure is complete in about twenty days. He claims to have had 13 cures in 13 cases.

Tendon Transplantation for Paralysis.—Dr. Vulpius of Heidelberg drew the most favorable conclusions from 160 operations performed by him. He said that the most vigorous asepsis was to be carried out. He sacrifices no muscles, but places the peripheral end of the cut tendon in connection with the neighboring muscles. In this manner he benefits the paralyzed muscles without causing any loss to the healthy ones. The indications are: Traumatic loss of muscles, tendons and nerves; spinal paralysis, especially infantile spinal paralysis; and partial paralysis generally. He claims that transplantation shows total paralysis to be more rare than is thought. The most favorable place for the operation is the leg, the thigh coming second. The muscles of the forearm offer more difficulty, nevertheless he has had already very satisfying results even there. Relapses have become more and more rare as the operative technic was perfected, and in case of relapse he found that any mistake could easily be corrected by a second operation.

THE NEW YORK ACADEMY OF MEDICINE—SECTION ON SURGERY.

Stated Meeting, Held April 19, 1900.

The President, William H. Thomson, M.D., in the Chair.

Physiology of Internal Secretions.—Professor William H. Howell, of Johns Hopkins University, Baltimore, Md., said that three years ago he discussed this same subject before a congress of American physicians. Just then the subject of tissue-therapy and of internal secretions was attracting a great deal of attention, but the hopes that were raised by Brown-Séquard's experiments were not destined to be realized. There were insurmountable obstacles in the way of successful tissue-therapy. Some advances have been made in the last few years that seem worthy of notice. Originally, when it was noted that extirpation of the thyroid caused symptoms of myxedema or death, these results were attributed according to the theories of Claude Bernard and Brown-Séquard to the absence of the internal secretion of the gland. This theory seemed to furnish also the explanation for the benefit derived from the administration of thyroid in cases in which the gland was absent or defective. It seems to be definitely settled that there is an internal secretion of the thyroid gland and that its active principle is iodothyrin. There are two theories for the method of action of this internal secretion; the first supposes that certain toxins are produced in the course of normal metabolism, which act as poison within the body. These are neutralized by the secretions of the thyroid, which would thus form a kind of antitoxin. This theory involves the awkward assumption of a number of specific toxins and antitoxins for the purpose of carrying on normal metabolism. The other theory is that the thyroid secretion supplies an element which is necessary for healthy nutrition. Tissue-therapy with thyroid substance has been eminently successful.

Pancreas, Adrenals and Ovary.—Tissue-therapy with the pancreas and adrenals has been a failure. Curiously enough, however, ovarian extract has been productive of good in the hands of a number of conservative observers. It is well known what an influence the ovaries have

on general metabolism. As the result of oophorectomy women put on fat, the uterus and mammæ atrophy and certain nerve-symptoms of a very distinctive character occur. These observations on human beings are supported and confirmed by physiological experiments. It has been found that certain symptoms due to ovarian disease and certain affections due to impaired metabolism can be influenced for good by the administration of ovarian extract. Animals from which the ovaries are removed at first show no change in metabolism. At the end of six or seven weeks, however, there is a distinct decrease in the amount of oxygen used by the animal. On the other hand, when ovarian extract is given the amount of oxygen consumed by animals from whom the ovaries have been removed is increased. The oxygenation process in normal animals is not affected by the administration of ovarian extract. There are some differences of opinion as to these results, but the differences would seem to be due to the length of time that is allowed to elapse before observations were taken. It is only after six or eight weeks that this change in the consumption of oxygen is noticed. These observations with regard to the ovary are all the more interesting because it has been demonstrated that the ovary can be successfully grafted from one animal to another and even from one human being to another. The nature of this substance in the ovary which produces the action upon oxidation is not known. It has been suggested that it is probably of a ferment character and it has been spoken of as an oxydase or oxidizing ferment. Neither is it known from what tissue elements in the ovaries the substance is derived. It has been suggested that it originates in the corpus luteum. This is not improbable seeing the almost glandlike character of this structure.

It is an interesting observation that while castration in the male animal causes the same decrease in the oxidation process as does oophorectomy in the female, the administration of testicular extract to castrated animals does not increase the consumption of oxygen in the male, while the administration of ovarian extract causes the increase in the male as well as in the female.

Parathyroids.—Some years ago the question of the removal of the thyroid and its effects seemed simple and settled. Of late years, however, it has come to be recognized that the parathyroids, small glandular bodies lying in the neighborhood of the thyroid, play an important rôle in the effects produced by thyroidectomy. It was formerly throught that these little bodies consisted of embryonic thyroid tissue which occasionally developed into fully-formed thyroid tissue after the removal of the thyroid. This hypothesis was not supported by observations. It is now known that the little bodies have a function of their own and that they are probably more important to the economy than even the thyroid itself. When the parathyroids are removed the muscular trembling, the apathy, the malnutrition and the acute marasmic condition which it was customary to attribute to acute thryroidism develop. Moussu attributes the chronic constitutional weakness which leads to death to removal of the thyroids. Rapid death, however, is due to the parathyroids and each of these sets of glands has a secretion peculiar to itself. The parathyroids contain iodine in notable quantities. This is as much as we know yet of their secretion. Clinically we have not so far been able to employ parathyroids for any purpose.

Adrenal Therapy.—That there is an internal secretion from the adrenals there seems to be no doubt. Long ago it was noted that adrenal substance caused a rise of blood-pressure. Then it was noted that there was in the blood of the adrenal veins a substance which caused such a rise of blood-pressure if injected into the same or another animal. The amount of this substance contained in the adrenal veins could be increased by irritation of the splanchnic nerves. In a word, the adrenals act as true glands with the reflex nerve-mechanism possessed by ordinary glands that have a duct. If a cannula be put into the adrenal vein and the blood collected and the peripheral end of the cut splanchnic nerve be stimulated electrically, the blood obtained is not more in quantity in a definite time than before, but it contains more of a substance that causes a rise of blood-pressure; that is, there is not a more rapid flow of blood from the gland, but there is greater secretory activity. Ewald thinks that he has obtained the active principle of the adrenals. It is epinephrin, a rather simple body. It has a curious chromogenic effect which connects it with Addison's disease. The effect of the substance is, however, only passing. Hence it is that the use of adrenal has not been successful in Addison's disease. The constant presence of a certain amount of adrenal substance is required to prevent the symptoms of that disease, and, as it is very easily broken up in the circulation, success would require constant injection. The only way to make up for diseased adrenals is by grafting methods. There is some promise in this form of treatment, but it has not yet been successfully accomplished. The action of adrenal substance is peripheral not central. After the spinal cord has been destroyed adrenal extract still causes constriction of the blood-vessels. In the dog the destruction of the spinal cord may cause a fall of blood-pressure from 150 millimeters to 20 millimeters. Restoration of the blood-pressure will take place almost immediately after the administration of adrenal extract. The effect is, however, only temporary and the remedy would have to be administered almost constantly to be of lasting effect. For this reason adrenal substance is not likely to be of any value in surgical shock.

Internal Pancreatic Secretion.—The evidence as to the existence of an internal secretion of the pancreas is practically complete. Extirpation of the pancreas is followed by a glycosuria which

becomes a true diabetes even when starch is not consumed; 8 to 10 per cent. of sugar appears in the urine and the ordinary symptoms of diabetes develop, thirst and hunger and emaciation, while oxybutyric acid appears in the blood. On the other hand, when the duct of the pancreas is closed by an injection of paraffin, while the nutrition of the animal suffers the glycosuria that results is only a passing incident. If only a small amount of pancreatic tissue is left, about one-fifth, true diabetes does not develop. Transplantation of the pancreas suffices to prevent the diabetes. Human and pancreatic diabetes seem to be the same affection. It is true that often in the human being no change has been found in the pancreas, but it must be remembered that our methods for the investigation of such changes are crude. It is very probable that changes in the cells of the pancreas make the difference in function which gives rise to diabetes. It is very interesting to note that, while in true diabetes the power to use dextrose is lost, the power to use levulose often remains. It is probable, therefore, that the internal pancreatic secretion is an enzyme, which somehow brings about the conversion of dextrose into other forms in which it is available for purposes of metabolism. Whatever this enzyme is it must be peculiarly constituted so as to fit into one form, *viz.*, the dextro-rotary of sugar, as a key into a lock, while another corresponding substance fits into the levo-rotary form of sugar. Lepine has found a glycolytic enzyme in the blood which acts upon sugar. He assumes that this is the internal secretion of the pancreas. The blood of the depancreatized animals has much less glycolytic power than that of normal animals. There is more of the glycolytic faculty in blood from the pancreatic vein than from elsewhere in the body. Other observers have denied this glycolytic enzyme to be pancreatic and have said that whatever fermentative action there is occurs only in shed blood and is the result of the disintegration of leucocytes. The use of pancreatic extract has been absolutely unavailing in true diabetes. There is some hope that transplantation of the pancreas may yet accomplish something in the therapeutics of the disease. Pancreatic grafts cure diabetes in animals that has been caused by the removal of the pancreas. The transplantation is difficult to perform, however, and so far has not even been tried on the human being.

Essential Internal Secretions.—The internal secretion of at least three and probably four glands is absolutely necessary to life. They are the thyroid, the adrenals, the pancreas and probably the parathyroids. There are others of whose function we are not yet sufficiently assured. Only during this last decade have we come to realize the importance of the pituitary body, for instance, in important nutritional processes. Time was when nutrition seemed simple chemism between the cell and the food-stuffs presented for its use. Now we know that there is a complicated system of check and countercheck on all cellular processes. Trophic nerves have their influence on all functions and every tissue of the body must be keyed up to its proper tone by specific secretion. Where simplicity seemed to reign the course of investigation has brought us face to face with greater complexity. Progress, however, is constantly taking place and each new advance is a source of encouragement.

In the discussion Dr. Blake said that the active principle of the suprarenals seems to affect especially the muscular walls of the blood-vessels. From it there results a latent dynamic impulse. This seems the best explanation of its effect. While on the healthy heart adrenal substance has no effect, on diseased hearts it has a very marked action. When absorbed from the stomach its power seems to be neutralized by the digestive ferments. Absorbed from mucous surfaces, however, it acts to prevent cardiac intermittence and in mitral insufficiency it is the best cardiac regulator we have. Mitral murmurs have been known to disappear during its use. On aortic insufficiency it has no effect.

Importance of Parathyroids.—Dr. Cunningham said that he has been very much interested in the problem of the significance of the parathyroids. In the dog there are two of these organs on each side, one lying within and the other without the substances of the thyroid gland. The latter is rather easily removed; the other not without great injury to the thyroid. Instead of removing the thyroid Dr. Cunningham has experimented in another way. After loosening all the connections of the thyroid but leaving its blood-vessels intact, he surrounded that structure by a purse of animal membrane and then inserted drainage at the lower end of the wound. All three of the dogs on which he experimented developed mild tetany, restlessness, a state of malnutrition and myxedema. One of them was killed at the end of a month, the other two died at the end of two months from a subacute cachexia. This experiment would seem to prove that there is some substance given off by the thyroid that produces a distinct effect on metabolism and preserves the organism from an autointoxication. In these experiments the parathyroids were not disturbed, so that the question of their significance to the organism seems to be an open one.

Addison's Disease and Adrenal Therapy.—Dr. William H. Thomson said that, despite the fact that reports of the use of adrenal substance in Addison's disease had usually been unfavorable, he had two cases to report in which the benefit derived from this method of treatment had been most striking. All the other cases of Addison's disease except these two that have come under his observation have proved fatal in twenty months or less. The first successful case was a farmer who came under treatment four years ago. There was absolutely no doubt of the diagnosis of the disease, yet under the influence of adrenal extracts his symptoms abated and he has

continued to enjoy reasonably good health up to the present time. The second case is that of a theatrical manager who came under observation three years ago. He has been seen by some of the best consultants in the city and all are agreed that he is suffering from Addison's disease. In his case the symptoms have abated; especially the intense tiredness and disinclination to exertion have lessened and he has been able to continue his occupation. He is at present abroad attending to his business.

In closing the discussion Dr. Howells said that the physiologists have no theory as to the action of the adrenals, except that some substances which they secrete have an effect on blood-pressure. In the same way they have an effect on the heart, but this is very passing. As to the difference of their action on normal pathological hearts there are as yet not enough observations recorded to justify the construction of a theory in explanation of the action. Further observations are required in order to make clear just how thyroid acts on the heart in pathological conditions.

The important thing in adrenal ductless-gland therapy, as we see it now, is the possibility of grafting portions of glands in cases where degeneration of the original gland has taken place. Experiments in this line are well worth the trying. It is an extremely difficult procedure, but improvements in technic will undoubtedly make it possible and open up a very glorious prospect for tissue-therapy.

As to the parathyroids, it is to be remembered that their importance has been claimed as the result of the experiments of Professor Gley, who is one of the best-known physiological experimenters in the world. His observations have been confirmed by other conservative physiologists and in general considerable weight is placed on the conclusions which he announced.

REVIEWS.

The Soul of Man. An Investigation of the Facts of Physiological and Experimental Psychology. By Dr. Paul Carus. The Open Court Publishing Co., Chicago.

There are certain features in this production that approach the unique. In the prefatory chapter man's soul is stated to be something mysterious, wonderful and marvelous, and it is certain that the author has in its exposition made it fully up to contract. We do not know where we have ever found such a disjointed exposition of the subject, but perhaps it is a cavil to imagine that the soul of man is aught but a "thing of shreds and tatters."

The work consists of a series of short essays on various interesting topics, interspersed with badly-reproduced pictures of the nervous system of different animals. The essays rarely rise above the level of mediocrity and as for the relationship of the several parts it is almost impossible to comprehend their coherence. The facts in the main were true for the time when they were written, mostly twenty years ago. Some of the deductions, however, are worthy of serious consideration both for their muddy logic and inaccuracy. We commend one of these to the pregnant woman. "Child-bearing in itself, the growth of a new being, is neither pleasurable nor painful. It often becomes painful by the many disturbances which it is but too liable to cause." We can hardly realize that Dr. Carus has had much personal experience in the matter. The work is amusing, however, and for those but partly trained in physiology or psychology will prove of interest and, if further supplemented by later classics, will be profitable.

BOOKS RECEIVED.

Text-Book of Practical Medicine. By William Gilman Thompson, M.D. Illustrated by 79 Engravings. Lea Brothers & Co., Philadelphia and New York.

Dictionary of Medicine. By Alexander Duane, M.D. Third Edition, Enlarged and Thoroughly Revised. With 8 full-page Colored Plates. Lea Brothers & Co., Philadelphia and New York.

Manual of Surgical Treatment. By W. Watson Cheyne, M.B., F.C.S., F.R.S., and F. F. Burghard, M.D. and M.S. (Lond.), F.R.C.S. In Seven Volumes. Vol. III. Surgical Affections of the Bones and Amputations. Lea Brothers & Co., Philadelphia and New York.

Transactions of the American Microscopical Society. Twenty-Second Annual Meeting, 1899. Vol. XXI. Edited by the Secretary.

Manual of Personal Hygiene. Edited by Walter L. Pyle, A.M., M.D. Illustrated. W. B. Saunders & Company, Philadelphia. $1.50.

Atlas and Epitome of Diseases Caused by Accidents. By Dr. Ed. Golebiewski of Berlin. Translated by Pearce Bailey, M.D. Illustrated. W. B. Saunders & Company, Philadelphia. $4.00.

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TROPHIC CHANGES IN CONSUMPTION: A CONTRIBUTION TO THE SYMPTOMATOLOGY OF THIS DISEASE.[1]

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TUBERCULOSIS is a disease, the beginning of which cannot always be traced. The early symptoms do not always mark the beginning of the tuberculous era, as has already been pointed out by Maraglinio. Although it is claimed that it takes from one to three years from the beginning of the infection to the full development, it may safely be said that the shadow of phthisis is cast long before its actual appearance; we can trace it back years and decades to the scrofulous era, and some authors go still further, declaring that consumption is directly inherited. Baumgarten[12] is the foremost supporter of this theory, which is decidedly opposed by Virchow, Cohnheim, Cornet and others. A more acceptable enunciation of Baumgarten is that scrofulosis is already tuberculosis, because it is proven that the products of scrofulosis generate tuberculosis. He regards scrofulosis as a kind of tuberculous sequel and the latter as a recrudescence of the early developed disease. I consider scrofulosis as having a certain analogy to syphilis in that it constitutes the primary and secondary stages of tuberculosis and like syphilis, being curable in these stages, reappears as tuberculosis of the lungs or of other organs like the tertiary lesions of syphilis. During this "latest" stage—an expression introduced by Cohnheim—there is developing a scrofulo-tuberculous stigma, which finds its prototype in the phthisical habitus of individuals with the so-called hereditary taint. I say "so-called" because I am not a believer in the hereditary theory of consumption; I agree fully with the most radical views regarding the infectiousness of that disease; the so-called "disposition" I consider an already existing manifestation of phthisis, believing further that undue exposure is the only source of consumption. That the offspring of consumptives often become tuberculous is not a proof to the contrary, it simply shows that the disease is easily transmitted by intimate domestic and social relations. On the other hand it has been proven[7] that children taken away in due time from the infectious focus usually develop into normal and healthy individuals, unless they are subjected to new infection. It is furthermore not uncommon to see the healthiest and wealthiest individuals afflicted with this dreadful disease, individuals whose family history is perfect.

[1] Read before the German Medical Society, February 5, 1900.

The area involved by the symptomatology of consumption is very extensive, nearly every organ may be affected, either directly by germs or indirectly in the form of so-called trophic changes, which may be caused by a virus, soluble protein substances circulating in the blood. The pathologic importance of some of these trophic changes is increased by the fact that they appear on the same side of the body as the diseased lung. This unilateral appearance of symptoms was first mentioned by Schaffer in 1878, but only in regard to diseases of the upper air passage; later Solly made mention of this peculiarity in regard to the nasal affection. I have found similar unilateral symptoms in other organs, which have not yet been described in the literature of the subject; my observations were made mostly on male consumptives of the Montefiore Home and of the Country Sanitarium at Bedford Station, N. Y.

The pathologic basis for the term "habitus phthisicus" is formed by changes in the skeleton, the etiology of which can be traced back to the scrofulous era. Strophies of single bones have been described, but they do not show any signs of phthisis particularly, except that they are apt to occur primarily in the ribs. The following are significant factors[6]: rapid growth of bones, ossification of the costal cartilage, disproportion between the width and depth of the thorax to its length, prominent angulus Ludovici, narrow scrobiculus cordis. Among the unilateral symptoms may be included scoliosis, depression of one shoulder, a wing-like protrusion of one scapula; the latter caused by atrophy of the musculus serratus magnus. Regarding the disproportions and deformities of the chest, I wish to state that they do not occur in adults with a normally developed skeleton, except scoliosis, and if we do observe it in such individuals we may safely assume that they had acquired such "thorax paralyticus" through tuberculosis in infancy or earlier childhood. Good muscular stratum and a strong panniculus adiposus may easily cover those abnormalities.

E. Fränkel[2] and others have described atrophy and degenerative changes in the muscles of consumptives, consisting of a decrease in the number of the primitive bundles, a granular degeneration and fine granular pigmentation of the same. The emaciation starts mostly in the neighborhood of the thorax and especially in the inspiratory muscles. Visible unilateral atrophy may implicate the intercostal muscles causing thus, with the atrophic ribs, flattened or deepened intercostal spaces; similar changes in the pectoralis major, supraspinatus and serratus magnus cause flatness in the re-

gion of their location. Considerable importance was formerly ascribed to the so-called "idiomuscular contractions," but according to Cornet this was contradicted by Lawson Tait, Stadelman and v. Ziemssen. T. W. Moore[19] states that "myotatic irritability of the pectoral muscles and of the platysma myoides is a valuable sign." Although I acknowledge the value of this sign in the pectoral muscles, I do not agree with the latter writer regarding its value in the platysma, because I found exactly a contrary reaction in this muscle on the affected side. If we tap with the percussion-hammer or any similar instrument the insertion of the platysma along the clavicula we will notice in healthy individuals lightning-like fibrillary contractions of the muscle. This reaction I found diminished 37 times out of 65 cases of phthisis on the same side as the lung was found diseased.

The emaciation in phthisis is due mainly to the disappearance of the fat and the atrophy of muscles. Strauss and Gamaleia noticed a rapid destruction of the panniculus adiposus after injections of dead germs and they attributed this result to the action of proteid of the dead germcells: Mafucci, Prudden and Hodenpyl have produced marasmus by the same means. But how can we explain the unilateral muscular atrophy of the thorax in phthisis? As it is well known, we observe on the affected side an insufficient expansion, a retardation during respiration, and the question is raised, are the muscles atrophic on account of their inactivity, or does the lung remain inactive on account of the atrophy of the muscles? The lung follows passively the respiratory excursions of the chestwall, and it seems therefore that the activity of the muscles is diminished on account of a reflex impulse from the diseased lung, and here we observe therefore besides the atrophy due to general causes also a local atrophy due to inactivity. By means of systematic exercises I was enabled to increase the expansion of the thorax and of the lungs in consumptives, utilizing thus the idea that strengthening of the respiratory muscles causes also a strengthening of the lungs.

The blood[8] also takes part in the general atrophy and shows changes similar to those observed in cachexia and marasmus. According to Rokitansky,[6] Brehmer and Andral the heart of consumptives is smaller than normal, and Beneke asserts that a congenitally small heart increases the disposition to consumption. Dr. W. Hutchinson,[22] who made 215 autopsies on different animals, says that there exists a certain relationship between the size of the heart and immunity against tuberculosis in animals. I am of the opinion that the smallness of the heart is rather the result of consumption in the early age, whereby the vagus becomes affected and influences the growth of the heart by means of the trophic fibers known to exist in this nerve. Histologically partial and complete atrophies have been described by Leyden, Venn, Strümpell and others; atrophy of the vagus by Vierordt,[7] of the phrenicus by Heine.[7] Jouanneau[7] describes a case of tachycardia in consequence of compression of the left vagus and phrenicus caused by pleuro-pericarditic adhesions (Cornet).

Tachycardia is furthermore caused, according to Riegel, Becker and others, by tuberculosis of the bronchial glands; according to Marfan[21] it is caused by diminution of the respiratory surface. Neither theory seems to be plausible, because irritation of the vagus causes retardation of heart action and on the other hand we notice tachycardia also in cases where there is only a very small respiratory area affected. It is possible that there is an irritation of the accelerator cordis nerves caused by proteids, circulating in the blood, or that certain fibers of the vagus, the so-called inhibitory fibers, are atrophic and thus the functional activity of the antagonistic nerves, the accelerantes, preponderates.

Complications of the upper air-passages in phthisis have a certain etiologic and symptomatologic significance. From the history of the patient the fact is often elicited that these parts were involved prior to the appearance of the pulmonary symptoms and often on the same side. Schäffer[1] in his statistical researches on the relationship of laryngeal disease to lung troubles has proven that long before the clinical diagnosis is established there are pathologic changes in the pharynx in the cavum pharyngonasale, hypertrophy of the tonsils, otitis media, and paresis of the soft palate on the same side on which the lung affection appears at a later period. Schäffer has observed this correspondence in 302 cases, or in 50.3 per cent. Solly[20] found this coincidence between the side of the nose and the side of the chest affected in 65 per cent. of his cases. Krieg, according to Cornet, observed the remarkable fact that out of 275 cases of unilateral tuberculosis of the larynx 252 cases or 91.6 per cent. had tuberculosis of the lung on the same side. In 21 cases of ear complications I found 20 on the same side as the affected lung. According to Schäffer, Cornet and others, paralytic vocal cords and hoarseness are the first manifestations of an impending or already existing lung affection; according to Luschka the recurrent nerve is the cause of this paralysis or paresis.

Mouth-breathing is also a characteristic feature in consumption, caused by chronic catarrh of the mucous membranes of the nose or by adenoid growths, and it is claimed that it is quite often the cause of primary infection of the lung.

The Fredericque-Thompson[3] gum symptom was formerly considered a valuable sign in incipient consumption, but this was disproved by G. Sticker, who examined 1000 cases for this symptom. Caries of the teeth appears more often in the early than in the later stages of the disease; the same may be said of the fetid breath. Conjunctivitis, blepharitis, chalazion[15] are rather early symptoms of phthisis and may be looked upon as evidences of the scrofulous diathesis.

More interesting are the paretic symptoms of the eye. In his text-book E. Fuchs mentions tuber-

culosis as a cause of paralysis of the eye muscles. I have observed impairment of sight in the beginning of consumption, but am not in the position to give further statistical data. Inequality of the pupils, which usually manifests itself as the paralytic form of mydriasis is a valuable sign in phthisis and gains in importance because of its nearly constant equilateral appearance, an occurrence which to my knowledge has not yet been described. Destre found inequality of the pupils in 97 per cent. of his cases; I have seen it in 75 out of 78 cases; of these 75 cases 66 showed the sign on the same side as the lung affection. The dilatation of the pupil is dependent upon the sympathetic, which gets its fibers, destined for the pupil, from the ciliospinal center; hypertrophied glands, it is claimed, produce an irritation of that center. I found that pilocarpine instillations caused disappearance of that symptom. Lately I have observed a greater pigmentation of the iris and of the mammilla on the same side as the diseased lung. Both symptoms belong to the early stage of consumption and have thus far not been mentioned in the literature of the subject, and I believe that the latter, the mammillary symptom, has some diagnostic value. Out of 82 cases I noticed the variation in pigmentation of mammilla in 74 times or in 92 per cent.; in 27 one-sided lung affections there was more pigmentation 25 times on the affected side; in cases where both lungs were affected the symptom prevailed on the more affected side.

The skin undoubtedly offers a great field for the discovery of trophic changes. According to Cornet, "the skin in phthisis becomes rough, dry, scaly; its color becomes sallow, gray, pale and is often changeable." Hyperhydrosis sets in early. Cornet observed it exceptionally on one side; I have frequently observed sweat-drops in phthisical patients during examination in the axilla and on the inner surface of the upper arm also in individuals who did not suffer from hyperhydrosis.

Hypersecretion[7] of the sebaceous glands is also common and gives the skin a fatty appearance and seems to be the cause of comedones in the early stages of consumption. Herpes zoster, a rare occurrence, stands according to Rendu[11] in causal connection with tuberculosis. Acne appears in the early stages of consumption; in 89 patients I have observed it 58 times and among these there was a more extensive eruption noticeable on the affected side in 26 instances. Pityriasis versicolor was wrongly associated with tuberculosis, although it is a fact that it appears quite frequently during the later stages of this disease; Barduzzi[5] made inoculations with the pityriasis detritus and caused tuberculous nodules. These results were affirmed by Dagnet and Haricourt, but Cornet insists that the experiments were wrongly conducted.

Pityriasis tabescentium[7] is a late sign, also chloasma phthisicorum, a hyperpigmentation of the skin in the later stages of phthisis. Both symptoms are rare and are not characteristic of the disease.

Little attention has been paid in the literature of this subject to loss of hair. Defluvium capilitii is a well-known, although not characteristic occurrence in chronic tuberculosis. I also have found quite regularly a partially diminished growth of hair on the thorax of the affected side, and in one instance I noticed the hair on the affected side turning gray. Among 118 consumptives I have found this "atrophy of the hair"—as I would like to call this symptom—100 times; in 14 of the 18 negative cases there was no growth of hair on either side, thus leaving 4 negative cases in a total number of 104. Among 100 cases of atrophy of the hair 95 corresponded to the affected lung, or 95 per cent. I wish to add that these 100 cases included all types of consumption, acute and chronic, unilateral and bilateral. Thirty-four cases of unilateral pulmonary affection were observed, and in these the symptom mostly appeared on the affected side; in cases of bilateral pulmonary disease atrophy of the hair was noticed on the side first involved. In 4 cases of arrested unilateral affection, hair atrophy was noticed on the formerly diseased side. These hair defects appear mostly on the anterior surface of the thorax, around the mammillæ, on the upper part of the thorax, on the shoulders and on the back. This symptom varies not only in extent, but also in intensity; in old chronic cases it is more striking. Microscopically there are no differences to be found.

As a consequence of these nerve-atrophies previously mentioned we may find disturbances of sensibility, of the vasomotor system, and even edema of the skin (Strümpell). In some cases I noticed a diminished reaction to mechanical irritation of the skin. Cyanosis of the skin with club-shaped fingers[10] is a valuable although not a pathognomonic sign in tuberculosis of the lungs. This deformity of the fingers depends, according to Litten, on hypertrophy of the soft tissue and not of the bones. Independently of the latter symptom there is noticed a striking, rapid growth of the nails, which gives them a claw-like appearance (Dufour).[10]

Glands are affected only through infection, and this mostly indirectly. Schlenker[1] described some cases in which the side upon which there were hypertrophic glands and tonsils corresponded with the side of the lung affection, but he did not make this differentiation in his article on that subject. It is known furthermore that the mamma also becomes involved in the general atrophy and lately I have observed in two phthisical girls a decided atrophy of the mammæ on the affected side. In women such a difference is not uncommon, but when observed in girls it may be of diagnostic value. A girl of twenty, whom I examined lately, claimed that four years previously she had some lung trouble with spitting of blood; she was sent to the mountains and recovered after one year. Since then she has suffered from shortness of breath and occasional slight pain in the left side. Examination of this somewhat anemic but strongly-built girl revealed

a diminished respiratory murmur of the left lung, left pupil enlarged, left mammilla more pigmented and decidedly smaller.

The liver presents a much more striking picture of the tuberculous diathesis. According to Ziegler, fatty degeneration regularly occurs in acute phthisis; Pitt[17] says that 22.5 per cent. of cirrhosis patients die of phthisis. Osler says:[17] "A remarkable feature in cirrhosis of the liver is its association with acute tuberculosis." C. R. Burr claims that the liver is more often affected in phthisis of the left lung. Burr, as is Aufrecht, is an advocate of the paretic theory of the origin of tuberculosis and attributes to the vagus, phrenicus and their connections the etiology of the tuberculous diathesis and as a further consequence of this disease mentions diabetes mellitus, one of the most dreaded complications in phthisis. It is claimed that an impaired function of the liver cells is the cause of this complication. The modifications occurring in phthisis in consequence of diabetes are, according to Blumenfeld,[18] absence of hyperhydrosis and decrease of fever. Hemorrhages are also seldom in that stage (v. Leyden, v. Noorden). Bartholow[17] found an abnormal secretion of urea in the urine of consumptives.

To complete the description of these indirect symptoms I have to mention among the earlier ones, gastric disturbances; among the later ones, impairment of the intellect and increase of the sexual desire; and among the terminal ones, amyloid degenerations. With the enumeration of all these signs I have by no means exhausted the subject, and the question arises, what is the cause of these unilateral disturbances?

Is it the virus which is circulating in the blood? Surely not. Are these signs produced by continuity from the diseased foci? This supposition does not seem any more plausible. It seems to be a degeneration of the trophic fibers in the nerves of the parts affected and we may ask, are these nerve-atrophies of primary or of secondary origin? Aufrecht, Burr and other adherents of the so-called paretic etiology of consumption, believe the trophic changes in the tissues to be the primary ones; that the bacillus finds a suitable nidus in that impaired tissue and then causes the well-known symptoms by its subsequent growth and development. Although we cannot deny that this hypothesis deserves some consideration, its truth has not been proven by positive demonstration. It is more likely that the bacillus is the primary cause; that the nerve termini become affected in the diseased tissue, as they do in septic infection, developing ultimately into a chronic degenerative atrophy of the nerves. The frequent occurrence of neuritis, as shown by histological researches, fully justifies this supposition.

In conclusion I wish to illustrate by a few cases the curious coincidence of the side on which the trophic signs occur and that in which the lung is diseased.

Case I.—Acute phthisis with cavity of right lung. B., nineteen years of age, sick about one year; family history negative. Inspection reveals: Right shoulder lower, right scapula deviated, right pupil enlarged. Atrophy of hair on right side of thorax, right mammilla more deeply pigmented, platysma reaction on right side very much diminished. In addition there have been acne defluvium capillitii and caries of teeth from the beginning of the disease.

Case II.—Chronic tuberculosis of the right lung with recent infiltration of the left lung. S. S., twenty-seven years of age, sick seven years; family history negative. For seven years he has been hoarse, right side of nose was operated on three times, right tonsil larger; atrophy of hair, pigmentation of mammilla and iris, paresis of platysma on right side. Acne frequent on left side, caries of teeth from the beginning.

Case III.—Cured tuberculosis of right lung. Dr. B., physician, was attacked nine years ago with consumption; after three years supposed to have recovered. During the acute stage he suffered from disturbances of eye sight of the right eye, right otitis, nose and thorax affection, pain in right side and right testicle. Formerly he had good teeth; during his sickness he lost six of them but none since his recovery. He gained eighty to ninety pounds, was married, had healthy children and attends to his professional duties without interruption. Examination reveals: Right pupil enlarged, hair atrophy and paresis of platysma on right side.

Case IV.—Latent tuberculosis. H., twenty-eight years of age, engineer; consumption in family; had pneumonia (?) three times, mumps at twenty-six, measles at twenty-seven; from fourteen to sixteen there was spitting of blood; he has always coughed and was subject to colds. The examination of lungs reveals on right side nothing positive; on left side, in posterior axillary line, there are fine crepitant râles. Inspection: Right shoulder lower, right scoliosis; dilatation of pupil, hypertrophy of tonsil, hair atrophy on right side. Acne and pityriasis on left side. Quick growth of nails, which are curved, caries of teeth and defluvium capillitii.

The objective evidence of the last case justifies the diagnosis of an obsolete affection of the right lung with a slight acute exacerbation of the left lung. The discovery of early or latent tuberculosis, as is known, often causes great difficulties and the tuberculin test does not always give satisfactory results; besides its application has some difficulties for the practising physician because of the refusal of the patients to submit to the test.

I am confident that the present results, although obtained from a proportionately small number of cases will be verified by the investigation of more extensive material. The practical results of these researches, briefly enumerated, are the possibility of recognizing the early and latent stage of consumption sooner than with the present means or methods; in acute cases, to as-

certain the side affected, if the physical examination does not give satisfactory evidence. If both sides are affected, these signs make it possible furthermore to ascertain the side primarily affected, on account of the occurrence of trophic disturbances on that side, and in cured cases to diagnosticate the location of an obsolete phthisis.

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THE EFFECT OF FLASHES OF ELECTRIC LIGHT ON THE EYE.[1]

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Although some of the cases here reported occurred in my practice more than four years ago, they were recently recalled to my mind by reading Professor Haab's article (*Klin. Monatsbt. für Augenheilkunde*, July, 1899) entitled "Traumatic Macular Changes Produced by Electric Currents." There have been perhaps more cases observed than reported of temporary injury to the eye through intense electric flashes, but the rarity of such cases warrants the present presentation which will at all events call attention to the lurking dangers of the electric light.

Case I.—Mr. E., aged twenty-nine years, one of the chief superintendents of the city electric-light company, consulted me in my office May 20, 1895. The history given was as follows: About one hour previous, while he was trying to adjust some wires, two of them became crossed a short distance in front of his eyes and a blinding flash of light resulted. For a few minutes his vision disappeared, but gradually returned, leaving only a marked burning irritation in his eyes, the reason for the present consultation. On examining both eyes, a marked pink zone of injected blood-vessels could be seen around the cornea. Vision in both eyes was normal. He complained only of a smarting sensation about the lids and a slight amount of photophobia. The use of dark glasses, hot fomentations to the eyes and absolute rest for a few days was the only treatment advised. About two o'clock that night I received a telephone message saying that Mr. E. was suffering so much pain in his eyes that he desired me to come immediately to his house. On arriving I found both eyes a little more congested than on the previous examination. He was suffering from violent aching pains in the eyeball. On close examination the cornea was found to look a little hazy, a condition which was not present when he was at the office. There was marked photophobia. Several drops of a two-per-cent. solution of cocaine were instilled into the eyes and also a drop of weak atropine solution. In about fifteen minutes the patient was perfectly easy and reported next morning at the office that he had remained so all night, and even then he was perfectly comfortable. On examination the cornea was found to be clear and all signs of irritation had subsided. His eyes rapidly returned to the normal state. No changes could be seen with the ophthalmoscope, although the symptoms pointed to a decided retinal irritation.

Case II.—Mr. M., aged eighteen years, also an employee of the Georgia Electric-Light Company. The history of this young man was almost identical with that of Case I., with the exception that he was not seen until two days after the injury. A similar electric flash took place just in front of his eyes and he was also blinded for a few minutes. On recovering from the shock he bathed his eyes in cold water, and except for a slight irritation he experienced no discomfort. The irritation persisting the company sent him to me for examination. R.E., V., 20/30. Improved by no glass. L.E., V., 20/30. Decided ciliary injection in the right eye and very slight in the left. Pupils react to light and accommodation, but appear rather contracted. The cornea of the right eye appeared a little hazy. By ophthalmoscopic examination I must acknowledge that nothing abnormal could be discovered, although the region of macula in the right eye may have looked a little cloudy. Neither in this case nor in the first was any scotoma or contraction of the visual field to be found. The patient was ordered to wear dark glasses, use hot fomentations to the eyes, and a drop of atropine solution was instilled into both. He had no further trouble and vision in both eyes became normal. The flash of light in both cases came from wires carrying a 500 voltage.

Case III.—E. L., aged fifty-two years. Admitted to Grady Hospital on account of an accident similar to Case II. This case was almost identical with the one just reported both in symptoms and the treatment employed.

A few cases have been reported in which intense electric flashes have caused a temporary blindness in which the pathologic lesion has been a grayish discoloration in the region of the

[1] Read before American Ophthalmological Society, Washington D. C., May 1–3, 1900.

macula lutea. The action of snow upon the eyes, producing the phenomenon known as "snow blindness," is of no infrequent occurrence in the frigid zones, and the pathologic conditions there found are quite similar to those seen in the eyes which have been injured by electric flashes.

The subject of pathologic changes in the macula lutea due to traumatic causes first obtained prominence in an article by Professor Haab of Zurich at the Seventh International Ophthalmological Congress held at Heidelberg. Since that time Professor Haab and his associates have continued to study the subject and given at intervals further contributions relating to these traumatic changes. In 1889 E. Meyer of Zurich delivered an inaugural address upon this subject, and in 1896 A. Siegfried of the same city and of the same clinic published an extensive article upon "The Traumatic Changes in the Macula Lutea of the Retina."

Intense light as the cause of retinal and conjunctival changes has been known to careful observers for a long time. Electric light as a cause is of comparatively recent date, and only since it has become so universally popular for domestic use. One has but to note the dazzling effect produced upon the eyes by the bright reflection of the snow or the same effect when we gaze, unaided by tinted glasses, upon the sun in partial eclipse, to realize how irritating and blinding such lights are to our visual members. "Snow-blindness" has been known to ophthalmologists for years, as has also the blinding effect of bright sunlight upon the eyes.

A very interesting discussion of this latter subject with an abstract of all cases can be found in an article by Mackeye, published in the *Ophthalmic Review*. He found that after exposure of the eyes to sunlight the patient noticed a dark spot in the field of vision. This on examination was found to be a positive scotoma which lasted for a certain period of time and then passed away. Mackeye also found that this represented color-scotomata extending over a large area. Patients in such a state will often see objects twisted, producing the condition known as metamorphopsia. The ophthalmoscope will sometimes show no changes, whereas in others a decided hazy condition will be found in and around the macula, occasionally with an accompanying pigmentation. Vision as a rule is reduced, and when this is marked recovery rarely takes place. Pigmentation of the retina caused by the action of sunlight has been adduced by Monoyer as a cause of the condition known as "retinitis pigmentosa." Deutschmann has shown by experiment that concentration of the direct rays of sunlight upon the retina of a rabbit produces a coagulation of the retinal albumen with an accompanying pigmentation. However, such an analogous condition could not be attributed to the action of the sunlight upon the eye. While the action of the sunlight upon the snow produces a decided retinal irritation, it manifests its chief symptoms upon the eye by producing a severe conjunctivitis with sometimes a diffuse keratitis and ulcers of the cornea. It rarely leaves any bad results.

The effect of bright electric light upon the eye has also been investigated and the results noted. Just what degree of brilliancy it takes to produce injurious effects upon the eye has not been definitely settled. It is true that the ordinary incandescent electric light seems the best for general illuminating purposes. It is brilliant, produces less heat and therefore less particles of combustion, is steadier than gas in many instances, and is the nearest approach perhaps to the daily sunlight. However, I must say that experience in the use of incandescent light and the Welsbach gaslight with proper shading has influenced me into a preference for the latter. Of course, the latter is more troublesome to keep and therefore has its disadvantages, but when subdued by the use of white shades it certainly makes a most excellent light by which to work. Personally I have used this light for years and now prefer it to any other. Hartridge of London, in an article published in the *British Medical Journal*, 1892, on "The Effect of Electric Light Upon the Eyes," says that no bad results have ever been observed in the eyes from the ordinary use of the incandescent light. Although since this publication I have seen no other reports to the contrary, personal observation prevents me from agreeing with the author referred to. A case recently under my observation could be attributed to no other cause. Mr. H., aged twenty-four years, night-clerk in a hotel, consulted me last February on account of a slight irritation in his left eye. History was as follows: Physically he was a perfect specimen of manhood. He worked every night as bookkeeper and clerk under the constant glare of the incandescent electric lights and slept during the day. Up to this time he had never had any trouble with his eyes; he gave absolutely no history of syphilis nor could any signs be found on the closest examination; he had never been sick a day in his life, nor had he ever had the slightest touch of rheumatism, and never felt better than at present.

On examination the left eye showed contracted pupil, but no more than the right. It did not respond to light. There was only the faintest zone of circumcorneal congestion. Vision was normal but photophobia was present. Right eye was normal. On using atropine in the left eye an incipient iritis was readily diagnosed. It was impossible to dilate the pupil *ad maximum*, although there seemed to be no points of adhesion. The iritic muscles appeared perfectly torpid.

The case proved to be one of long treatment, although at no time were the objective or subjective symptoms severe. Nothing was used but atropine solutions, hot fomentations and blisters to the temples. Leeches finally produced a most rapid amelioration of the symptoms. In this case, there was no doubt in my mind that the attack must be attributed to the electric light. He worked for hours every night with an incandes-

cent drop-light just in front and to the left, so that there was a constant glimmer, especially in the left eye. There was never any trouble with the right eye. Since that time he has had no further trouble as he was transferred after recovery to day-duty.

During the last few years I have had under my care for ocular troubles a number of young ladies boarding in a large school where incandescent lights were used. In some cases I have had to order a cessation from school work, and in other cases I have substituted a student's lamp for the electric light with the most gratifying results. My experience has been that these incandescent electric lights are not suitable for a light by which to do constant work.

Hewitt in the *British Medical Journal*, 1893, calls attention to a condition of the eye designated as electric ophthalmia. The symptoms of this disease are said to be the same as those of snow-blindness, *viz.*, swollen lids and congested conjunctivæ, later followed by a muco-purulent discharge. This condition is usually found among those employed in electric welding operations, less frequently among those who use arc lights. Several cases have been reported of blinding or dazzling of the retina through intense flashes of lightning which show some similarity to those caused by electricity.

As I have said Professor Haab of Zurich was one of the first to call attention to changes in the retina, especially in and around the macular region from traumatic and constitutional causes, in an article read before the Seventh International Congress at Heidelberg, 1888, and in 1889 E. Meyer from the same clinic continued the study of the subject. These two writers discussed more in detail the vulnerability of the macular region to various causes rather than to any particular one of traumatic origin. Their subsequent writings seem more of a clinical demonstration of their views set forth. In 1894 Dr. E. C. Rivers published a very interesting case in Knapp's *Archives* on "Injury to the Eyes from Heavy Charge of Electricity." This case condensed is as follows: H. E., aged twenty-five years, employed as an engineer in the motor-house of the Denver Car Company, accidentally made a short circuit by means of a small wrench in his hands, causing the full 500 volts to pass through his arm and out at the wrench, accompanied by a loud report and a very intense flash of light. The patient was stunned and immediately had severe pain in the eyes. Rivers saw the patient one hour after the accident and found the following condition present: Face, eyebrows and lids, neck and hand badly burned. On examining the eyes the conjunctiva was found strongly congested and the cornea of both eyes almost opaque. Vision equalled perception of light. Under the use of atropine, castor-oil, and dry aseptic cloths, the eyes progressed well. On the third day the whole eschar on the cornea was thrown off and this being only the epithelial membrane the remainder was left clear. A few days later L.E., vision equalled 20/40; R.E., vision equalled 20/100. The ophthalmoscope showed the media clear. The retina in the right eye looked hazy. Visual fields were normal for all colors. Six months later the patient reported that he still suffered from photophobia and had to wear colored glasses. He was also compelled to look very intently in order to see small objects. In my own cases the flash was not near enough to produce burning of the tissues.

Dr. L. D. Broose of Evansville, Ind., has reported two cases of retinal irritation from electric flashes which correspond in detail with my own: J. H., aged twenty-four years, an employee of the electric street railroad, accidentally received a shock from one of the trolley wires and at the same time the eyes were subjected to a very intense flash of light. When seen five hours later the conjunctival vessels were found injected, the eyes suffused with tears, pupils contracted and the patient suffering intense pain. None of the parts were burned. Patient was directed to stay in a darkened room and a two-per-cent. solution of cocaine was used in both eyes. In twenty-four hours he was able to resume work. F. W., aged twenty-three years, also an employee of an electric street railroad, struck a live wire with a file which he held in his hand and immediately there was an intense flash and the patient was rendered unconscious, this latter condition persisting but a short time. When seen a few hours later the patient was complaining of a severe pain in his eyes. The balls and lids were found markedly congested; pupils contracted. He was treated in the same manner as the first patient and in five days the patient was able to resume work. The ophthalmoscope showed nothing abnormal. No mention was made of the field of vision.

Professor Haab discusses this subject and reports another case, the clinical study of which presents some features of interest. As this article has not appeared in English, I will take the liberty of making an abstract report. H. W., aged thirty-four years, machinist, consulted Professor Haab on August 9, 1895, concerning his eye which had received a flash of light from a dynamo of sixty amperes. He came the same morning, immediately after the injury, because of the dimness of vision noticed, especially in the lower field. He was stunned by the flash of light, which was very near the eyes, and for a few moments could see nothing. The right eye being nearer to the dynamo than the left, it was the most affected. The pain was severe in both as if needles were sticking in them. There was only a slight irritation with some hyperemia of the conjunctiva of the right eye. Both pupils were contracted, the right more than the left. The irides appeared normal, R.E., vision equalled 3/10; no improvement with glasses; L.E., vision equalled normal. The ophthalmoscope showed nothing abnormal. On the next day the condition was decidedly better. R.E., vision equalled 3/10: w. = 0.5 D. equalled 3/6. On dilating the

pupil the left eye showed nothing abnormal. In the right eye a very interesting condition was present: (1) Extending over the whole macular region there was a very fine, milky discoloration so that the normal granular appearance was absent. In the deepest part of the macular center the discoloration was slightly less. A similar discoloration was nowhere present in the retina. (2) Running along the periphery of the retina could be seen a few yellowish-white spots of irregular form and size about once or twice as broad as a large branch of the central artery. Some spots existed also below the fovea, the latter being quite fine. In the middle of the fovea two small bright specks were found. Whether these small spots were in the retina or in the pigment epithelium could not be discovered. However, they were nowhere as white as those found in diabetes or albuminuria. Along the retinal vessels and on the papilla nothing abnormal could be found. The lens and vitreous were normal. The treatment consisted in absolute rest and the wearing of dark glasses. August 16th, R.E., vision 3/6 w. = 1 D; L.E., vision normal. The macular is slightly opaque. October 13th. The eye appeared normal. No signs of cataract.

These cases, as well as the subject itself, are of interest to the ophthalmologist as affording clinical data upon which to base a prognosis whenever such accidents should come under his care. Since electricity has become so universal in domestic use, accidents referable to it as a cause will necessarily be more common. The prognosis in all diseased conditions is determined by clinical experience, and hence the greater the number of cases reported the more certainty there is for a basis of deduction. The writer of this article does not lay claim to any original investigation, but purposes to bring forth from others their own personal experience. In the study of the cases reported there are many points of interest involved and chief among them as to whether the changes produced in the eye had a clinical or traumatic basis. This point certainly opens up an interesting field for investigation. Another point to be noticed was the universal presence of two symptoms in all cases, *viz.*: (1) The contraction of the pupil from the retinal irritation which was so strong that it persisted for several days. (2) The pain present always coming on several hours after the accident.

The action of electric flashes upon the eye is always classed as traumatic. Widmark has made some extended researches as to ocular trouble due to exposure to electric lights. From these he concludes that such are produced by a direct irritation of the parts affected, and that this irritation is produced almost exclusively by the ultraviolet rays, which as is known exert a similar influence upon the skin. This would raise an interesting question as to whether this same cause was not also the active one in the production of those skin lesions following exposure to the X-ray. Widmark has also found that such rays can also produce striated opacities of the lens. If such then be the case, it is justifiable to conclude that domestic lights are injurious to the eyes in proportion to the amount of the ultraviolet rays they contain. According to my own observation the Welsbach gas light has proven more satisfactory and less injurious as a light by which we may read and work than any other of which I have had any experience. It might be of interest to some of you to know the *modus operandi* of the Welsbach light, a name given after Baron Auer von Welsbach who first discovered the principle of such illumination. This light is produced, as you know, by ignited gas passing through a thin conical veil-like body called a mantle. It is on the order of the calcium illuminator. This mantle by being heated radiates a steady strong white light. The chief point is therefore in the construction of these mantles. A recent writer tells us that the mantles are made by "saturating a fabric with a solution of rare mineral earths and then burning out the fabric leaving a delicate crystalline skelcton." The rare earths considered most effective are thorium and cerium and they are contained in mineral mozarite, deposits of which, from having been almost worthless thirty years ago, have now attained great value. The writer also adds that "attempts have been made recently to make mantles on another than the Welsbach principle of saturating a fabric and then burning it out, namely, by making the ingredients into a paste with some gummy substance, drawing it out into threads and then weaving these into fabric, and burning it out as before." In conclusion, I would say that when the Welsbach is used for reading purposes there should always be an under shade, preferably white, so the intensity of the light may be mitigated.

GRAVES' THYROID DISEASE.[1]

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History.—In 1835 Graves of Dublin first described this disease and in 1840 Basedow in Germany again described it. Ever since the disease has been known by the names of these writers or under the name of exophthalmic goiter. I believe that it is always a disadvantage to medical nomenclature to use a writer's or investigator's name to denote a disease or symptom, but it has this undoubted advantage, in that it does not declare for any specific pathology or etiology for the condition. On the other hand, I believe that the much used term, exophthalmic goiter, is a positive misnomer.

In the first place, we can have the symptoms of increased secretion of the thyroid gland without any apparent enlargement of the thyroid. Secondly, we can have an enlarged thyroid with

[1] Read before the Section on Practice of Medicine of the American Medical Association, Atlantic City, N. J., June 5-8, 1900.

symptoms of hypersecretion without any exophthalmos. And thirdly, we can have exophthalmos without an enlarged thyroid and without symptoms of its hypersecretion. Therefore, I suggest the name of Graves' thyroid disease as one both distinctive and descriptive.

Frequency.—There seems to be a widely varying opinion as to the frequency of this disease, the majority of reporters believing that the disease is rare, while a large minority believe that it is very rare and a small minority state that the disease is frequent.[1] I have come to the conclusion that as far as the majority of practitioners are concerned the disease is rare, but that physicians in large centers of population will naturally see a good many cases of a disease which is so hard to cure and so troublesome in its symptoms. Consequently these practitioners see enough cases of Graves' disease to believe that it is frequent. Very rare I believe it is not.

Etiology.—There is no question of the great preponderance of this disease in the female as compared with the male, one writer even going so far as to state that "subjects of this disease are almost without exception women."[2] Dana[3] states that eighty per cent. of the cases are in women and Oppenheimer[4] that the ratio of women to men is twelve to one.

This thyroid disease probably never occurs in infancy and is very rare in early childhood and old age. It is preeminently a disease of young adult life and from the reports based upon the observations of forty observers the vast majority of cases occur between the ages of twenty-five and thirty-five and nearly all cases between the ages of twenty and forty.

Consequently in studying the etiology of a disease which occurs with such great preponderance in women and during the most active part of their sexual life we can but wonder what insidious relationship exists between the ovaries or the uterus and the thyroid gland. This question is answered by Freund,[5] who says that the thyroid gland is always congested and swollen during pregnancy and during menstruation. He also says that when there is continued or severe irritation of the uterus there will become a permanent enlargement of the thyroid. This accounts for the greater frequency of this disease in women than in men, as a gland which so frequently physiologically hypersecretes could easily be stimulated or irritated to more or less lasting increased activity.

The weight of opinion seems to be that this disease is not hereditary, although some reporters[6] have noted hereditary tendencies. I have noted several cases which will bear out the opinion of Dr. Charles Dana,[7] who believes that Graves' disease is not hereditary except in certain families where there is a tendency to goiter. It seems to be both an individual and a family disease, individual in that there may be but one case in a family and that it is not hereditary, but family in that its most frequent cause, intense emotion, is undoubtedly most liable to occur in neurotic families. Thus several members of such a family may show different symptoms of increased thyroid secretion with but one of them, perhaps, developing an actual Graves' disease; in fact, neurotic, as we use it, means emotional, excitable and mentally active.

Twenty of the forty observers reporting on the question place violent emotion as the most frequent predisposing cause. Heart lesions are placed as the next most frequent cause, and ordinary goiter and prolonged coughs are thought by several to be frequent causes of exophthalmic goiter.

We cannot better understand the etiology and symptoms of this disease than by studying the condition of thyroid extirpation and the symptoms of thyroid feeding.

Physiology of the Thyroid Gland.—That the thyroid gland furnishes an internal secretion necessary to the health of the organism is proved by the fact that absence of this gland or its lack of development in infancy produces the condition of cretinism, by the fact that atrophy of this gland causes the condition of myxedema, and, finally, by the fact that complete thyroidectomy causes operative myxedema and death.

Cretinism is a condition of impaired body and mental development, with gross, heavy features, edematous condition of the skin and harsh epidermis, while myxedema causes mental hebetude, thickening of the dermal tissues, and mucous edemas, especially of the face and hands. Operative myxedema, or cachexia thyreopriva, shows the ordinary symptoms of myxedema but much more intense, with tremors, convulsions, decreased cutaneous sensibility, dried skin and falling out of the hair. All of these three conditions, namely, cretinism, myxedema and operative myxedema, are cured and the symptoms kept in abeyance by thyroid feeding.

If thyroid extract or substance is fed to the normal individual in small doses it causes no evident symptoms. In good sized doses, or in small doses long continued, it causes loss of weight, palpitation, dizziness, sweating, tremors, signs of cardiac weakness and general debility, with nervousness and perhaps insomnia; in other words, the very symptoms which occur in exophthalmic goiter, which symptoms I believe are caused by hypersecretion of the thyroid. Also during the exacerbation of a Graves' disease the symptoms are all aggravated by feeding thyroid substance.

The active secretion of the thyroid gland seems to be the colloid material, which is a proteid substance containing phosphorus and iodine, the latter of which was discovered by Baumann in 1895. This gland is probably the only organ of the body that normally contains iodine and the average adult thyroid contains about .004 of this element. The gastric juice does not impair the action of the thyroid substance, though it undoubtedly breaks it up into several new combinations.

Physiologists have found a substance in this

gland which causes dilatation of the blood-vessels and a lowering of the blood-pressure. The gland seems to have the function of regulating the heart and vasomotor system, and it has been found that in absence of thyroid secretion the regulation of the loss of temperature is impaired, in other words, a vasomotor ataxia is present. It is quite possible that the thyroid and the suprarenal glands have the thermostatic power of regulating the temperature.

The thyroid also seems to have a great deal to do with the regulation of the development of connective tissue, for the less this secretion, apparently the greater the connective tissue development.

Examination of the excretion of obese individuals during the feeding of thyroids has shown that the metabolism of the body is increased as proved by an increased nitrogen, sodium chloride and phosphorus loss. Thyroid substance also acts as a diuretic, perhaps because it tends to increase the formation of urea, which is diuretic.

It is interesting to note that one observer, Bettmann,[8] has noted that thyroid feeding can produce an alimentary glycosuria, and we know that glycosuria is a frequent complication of Graves' disease or hypersecretion of the thyroid.

To sum up the physiological action of the thyroid, this secretion seems necessary for the proper equanimity of the central nervous system and perhaps nutrition and development of it; to the proper quantity of mucin that shall appear in the tissues, principally the connective tissues; to the proper organization of phosphorus for the assimilation into bone salts; and by its vasodilator power to properly regulate the peripheral circulation, thus regulating the heat loss and the normal insensible perspiration of the skin, which if disturbed shows on the one hand in the drying of the skin in myxedema, and on the other hand in the increased sweating in Graves' thyroid disease. Also this gland seems to have some power of regulating the rapidity of the cardiac contractions. It is probably easily excited to hypersecretion temporarily by emotion, and we know it to be normally enlarged and hypersecreting during menstruation and pregnancy.

Symptomatology.—To study the symptoms of this disease I would divide the course into periods, *viz.*, (1) the prethyroid period; (2) incipient symptoms; (3) the symptoms during exacerbation; (4) defervescence or, in cases that do not get well, the complications that cause death.

1. According to my belief as to the etiology of this disease, I cannot agree with one-third of those reporting cases who have stated that the onset was rapid. Neither can I believe that there were no symptoms before "the violent emotion" which precipitated the active symptoms. I believe that there is a long period of irritability of this gland as shown by neurotic symptoms, possibly a goiter which is irritating the rest of the gland, possibly some uterine disease or inflammation, or irritation, if the patient is a woman. I believe there have been repeated emotional disturbances, perhaps as far as symptoms go, well tolerated, but all of which conditions have given a chronic stimulation to the thyroid gland until the active symptoms, exophthalmic goiter, are present. Two-thirds of the cases of which reports have been sent to me have shown just this slow development and did not even apparently begin rapidly. The other third began their active symptoms rapidly; but I have not a doubt that the gland had been hypersecreting for a long time before. The apparent rapid onset in these cases due to some violent emotion is the last stimulant to a gland that has been so many times irritated as to finally lose its power of cessation of hyperactivity, and has lost its regulator, so to speak.

In order to diagnose these premonitory symptoms or signs of increased thyroid secretion, we must of course turn to the physiological action of thyroid secretion, namely, its tendency to produce palpitation, sleeplessness, headaches not assignable to any one cause, hot flashes, tendency to perspire readily due to dilatation of the peripheral blood-vessels, nervous irritability and excitability, and, if with these conditions we have continued uterine disturbance, we can state that this woman is in danger of developing Graves' thyroid disease. Doubtless many cases are being treated for functional disturbances in which we have a mildly increased thyroid secretion, not enough, perhaps, to give exophthalmos or an enlarged gland.

2. What are the initial symptoms of an actual developing Graves' disease? I find by my reports that the first symptoms of well-marked cases were just the symptoms to which we have referred, namely, palpitation and enlargement of the thyroid and nervous irritability; and these are the symptoms which the patients themselves have noted as the first objective signs of their disease. This simply means that in the patient who comes complaining of severe palpitation, nervous excitability and irritability, we should examine the condition of the thyroid and for diagnostic purposes feed her for a week on thyroid extract. If she is worse, our diagnosis of pending exophthalmic goiter seems to me to be probable.

3. Classically, we know the three symptoms of an established case of Graves' disease to be exophthalmos, enlarged thyroid and palpitation of the heart. Any one of the three legs of this tripod may be absent, but they generally are all present. The exophthalmos is generally of both eyes, but rarely one eye may be affected and that is generally the right. It is generally constantly present, may be occasionally present, is rarely altogether absent, in the majority of cases is mild in degree, but quite frequently is excessive. This forward projection of the eyeball is probably due to the overfilled blood-vessels in the back of the orbit. The so-called von Graefe symptom is the

inability of the upper eyelid to follow the eye when the patient looks down, due to the bulging forward of the eyeball. Stellwag's sign is the widening of the palpebral fissures, due to retraction of the upper lid, combined with infrequent winking. There may be a retraction of the lower lid and rarely ptosis or weakness of the ocular muscles and therefore inability to converge the eyes, Möbius' sign.

The thyroid gland may be enlarged as a whole, but generally only half of it is enlarged and that on the right side. It varies in size from time to time, but is rarely large enough to cause symptoms from pressure. There may be developed a cystic degeneration and the appearance of a regular goiter, but the rest of the gland is hypertrophied and hypersecreting.

Palpitation is of frequent occurrence and in nearly half the cases is severe. In the rare cases in which palpitation is mild in degree, it is probably in the later stage of the disease, that is, the stage of recovery. The rapidity of the pulse in fully developed cases varies, but averages one hundred and twenty beats to the minute in the majority of reported cases. It may be irregular, is rarely intermittent, but is often a fair pulse. Actual valvular disease as shown by the physical signs seems to be rare, but a large number of cases show hypertrophy of the heart and not a few dilatation. The next most constant symptom is tremor, rapid and involuntary, and most frequent in the hands and arms. General headache, insomnia, and mental depression are almost constant symptoms. Hysteria is present in about one-third of the reported cases and melancholia is certainly not infrequent. Signs of vasomotor ataxia are constantly present, such as vertigo, hot flashes, sweating, cold sensations, sudden paleness, local hyperemias, and, in some few cases, recurrent epistaxis. Pain, in addition to the headache, is most frequently referred to the eyes, next most frequently to the neck, and often to the ears. Dyspnea is of frequent occurrence and generally occurs with palpitation, both of which may be due to any nervous excitation. Cough is often present, probably largely due to circulatory disturbances. The other associated symptoms of this disease can be referred to the nervous condition of the patient or to the etiological cause of the disease, namely, hypersecretion of the thyroid. It is interesting to note that in a large number of cases in women there are menstrual disturbances and generally increased loss of blood. With the frequent palpitation, headache and sleeplessness, we could but expect the digestive disturbances, such as loss of appetite and consequent constipation, or in some cases diarrhea and perhaps vomiting. Most cases during the exacerbation, and I am inclined to think almost all cases, will show a loss of weight, and if the urine were carefully examined we would probably find a daily increased loss of nitrogen. As to how much muscular weakness there will be depends upon the rapidity of the loss of weight, the frequency of the palpitation and the condition of the nutrition. Some patients complain bitterly of the weakness of their legs, even falling down.

The diminished electrical resistance of the skin which seems to be quite a constant symptom when tested, may be due to two causes, namely, to the fact that the blood-vessels of the skin are more dilated than normally and therefore the skin shows less resistance, or that it may be due to the increased excitability of the central nervous system. Malnutrition of the skin may be shown by the falling out of the hair; there may be bronzing of different parts of the body, or there may be vitiligo. Sometimes polyuria is present, and a glycosuria or an albuminuria may develop. If there is polyuria or much sweating, the patient will complain of thirst. Added to the above, we may have all kinds of eye, ear and heart symptoms.

4. The duration of the disease may be from two to ten years or more. If the case does not do well and is to end in death, the complications that will bring this end about are diabetes (one of the most frequent), actual cardiac disease, and possibly a condition of progressive muscular debility or neurasthenia. The frequency of diabetes in this disease of an internal secreting gland is interesting in that other glands furnishing an internal secretion often cause diabetes when they become diseased. This is certainly true of the pancreas, for this gland furnishes an internal secretion, and it is certainly true of acromegaly with disordered pituitary secretion, unless here, too, it is the thyroid that is in trouble.

Cases that have lasted more than five years do not seem to tend to recovery. Cardiac weakness and insufficiency with edemas, passive congestions and albuminurias may occur even to a fatal degree. The severe nervous complications of melancholia or mania, chorea, etc., are rare, although hysteria is a more or less constant symptom. Cases that get well generally do so in two or three years, perhaps sooner, with a gradual amelioration of all the symptoms. It is difficult to estimate the number of cases that die and the number of cases that get well, but a considerable majority recover. Probably not more than ten per cent. die of this disease *per se*, the others die as a result of complications. Cases that get well etiologically do so from the gradual diminution of the secretion of the thyroid. This might naturally occur at the menopause in women.

Pathology.—Time will not permit me to discuss or to mention arguments for and against the various theories which have been offered as to the pathology of exophthalmic goiter. I refer to the cardiac theory, to the sympathetic-disease theory, and to the vasomotor neurasthenia or ataxic condition, which last I consider the result and not the cause of the disease. Briefly, I believe the symptoms to be caused by a hypersecretion of the thyroid gland. This hypersecretion carries with it of course all of the physiological actions of this product, two of which we understand, but we do not know how many

more there are. These two elements of this secretion will cause most of the symptoms present in exophthalmic goiter. First we have the vasodilator substance which we know dilates the peripheral blood-vessels and probably the abdominal vessels, in the former case causing the hot flashes and the sweating, and by filling the blood-vessels of the skin is at least part of the cause of the diminished electrical resistance, although as above stated another cause may be the excitation of the central nervous system. That this dilated condition of the peripheral blood-vessels is not continuous, which would be a condition of paralysis, is shown by the sudden coldness of the surface and chilly sensations, in other words, an ataxic condition of the vasomotor center. This irregular opening and shutting of the blood-vessels is at least one cause of the cerebral irritation giving insomnia and headache, both of which if neglected may lead not only to hysteria, but even melancholia or more serious cerebral disturbance.

Whether due to the diminished peripheral resistance, to the vasodilatation, or, perhaps, to some unknown irritation which this hypersecretion causes to the cardiac nervous mechanism, or a partial paralysis of the inhibitory mechanism, the heart begins to beat very rapidly and tachycardia is a frequent symptom. According to Dana, the rapid heart is probably due to impairment of the inhibitory fibers of the spinal accessory nerve. That there is thickening of some of the blood-vessels, seems to be proved and perhaps is as difficult to account for as the thickening of the blood-vessels in acromegaly. Where the thyroid gland has been found to have its connective tissue increased, I believe the patient has undoubtedly died of an intercurrent disease and the real exophthalmic condition was curing itself. When we consider the number of cases that get well under almost any treatment, we can only infer that the hypersecretion becomes gradually diminished and that the gland itself becomes worn out; I believe it is perfectly possible to have connective tissue form in the gland and the degeneration of the parenchyma go so far as to give diminished secretion and putting on of weight and possibly a partial myxedema.

A heart cannot beat rapidly for any length of time without its muscular tissue becoming weakened, and then any exertion or any extra work thrown upon it will cause a dilatation and the consequent results and symptoms of incompetency, namely, maldigestion of all kinds, passive hyperemia of the liver, and passive hyperemia of the kidneys with perhaps albuminuria.

Another increased element in this hypersecretion is that containing iodine. One function of this substance is to increase the nitrogenous, sodium chloride, and phosphoric acid waste. The body loses weight in an active case of exophthalmic goiter, and we are very liable to have with the increased urea output a diuretic action and polyuria. Whether from this increased nitrogenous metabolism or from some other cause we may have such dietetic and glandular disturbances as diabetes as a frequent complication, and whether these elements which we have described can account for the intense cerebral excitation which occurs, are of course questions. Whether or not there is another element in this thyroid secretion which may be utilized by the system when in normal amount, but when in excessive amount produces a toxic blood state, as held by Möbius, I am not ready to state, although there are a good many believers in the theory that something from the thyroid in this condition irritates the central nervous system.

In regard to the histology[9] of the gland itself in exophthalmic goiter, and I say histology instead of pathology because the typical gland in exophthalmic goiter is an hypertrophy or a condition denoting hyperactivity similar to the developing thyroid or to a mammary gland during lactation. That there have been pathological[10] findings in thyroid glands in these cases does not militate against the theory of normal hypertrophy, because it has been shown that a diseased gland, as colloid degeneration or an injury to some portion of it, or a goiter, can cause the rest of the gland to hypersecrete.

Here I would like to offer some thoughts which occur to me as worthy of discussion. In the first place, about eighty per cent. of all cases of exophthalmic goiter occur in women and between the ages of twenty and forty, while about eighty per cent. of all cases of myxedema also occur in women but between the ages of forty and fifty.[11] The exophthalmic goiter, due to hypersecretion, occurs during the active child-bearing period when the thyroid normally periodically hypersecretes. The myxedema, due to absence of thyroid secretion, occurs at the time of the menopause. Next, it is but a short step to infer that the hot flashes, nervousness, palpitation and cerebral disturbances occurring at the menopause or during that period are due to disturbed thyroid function. A primary hypersecretion before the thyroid atrophies would cause the profuse hemorrhages. As the thyroid atrophies normally after middle life, is its modified function possibly a determining cause of the menopause? Also, is its diminished secretion not one of the causes of the putting on of weight in women after the menopause? Also, as suggested by Bell,[12] who says that carcinoma of the uterus is a sign of epithelial degeneration and hence his treatment with thyroid feeding, is the diminished thyroid secretion the cause of the frequency of cancer after middle life, especially of cancer of the uterus after the menopause? Also, would we find that cancers occurring in young people are in cases in which the thyroid is undersecreting?

Diagnosis.—A well-marked case of Graves' thyroid disease is easy of diagnosis and cannot well be confounded with any other condition. The three cardinal symptoms of enlargement of the thyroid, exophthalmos, and tachycardia, occurring synchronously and with the fourth im-

portant symptom of tremor, give the diagnosis almost at a glance. Believing as I do that this disease is due to hypersecretion of the thyroid gland, a diagnosis of hypersecretion of this gland should be made before the radical symptoms have developed.

Hence, as above stated under the premonitory signs and early clinical history, headaches, sleeplessness, hot flashes, unexplainable sweating, nervousness, tremors, and irregular cardiac action, all or any of them might have increased thyroid secretion as a cause. Of course any tumor, whether a simple goiter or other growth, could press on the vagus or sympathetic and cause some of the symptoms of exophthalmic goiter. These conditions are generally easily diagnosed.

Prognosis.—As to the probable duration of a given case, it is practically impossible to make any estimate. The family tendency to neuroses or the previous neurotic symptoms of a case, and the rapidity of onset of apparent symptoms may cause a fair estimate as to prognosis of recovery. It is better where there is no family tendency to neuroses, where the patient has not previously had any nervous symptoms, and where the onset was apparently rather rapid. Well developed cases may recover in from one to five years. Theoretically, the older the individual in whom it develops, the sooner may recovery be expected. The percentage of cases that entirely recover is variously estimated; perhaps from twenty to thirty per cent. can be expected to get well, although some of these are certainly liable to relapses. Perhaps it is not unfair to state that seventy-five per cent. of all cases can be relieved and rendered more comfortable, this depending of course upon the length of time the symptoms have been present when the case comes under observation. In all probability, if all cases were treated to the best of our ability in the beginning, the majority would get well. By the time a case comes under observation there is likely to be a permanently impaired heart or an almost irreparable neurotic or neurasthenic condition, with possibly metabolic disorders, such as diabetes. Perhaps from ten to twenty per cent. of the cases die from complications directly attributable to this disease. Burr[13] says that the disease is more fatal in men than in women. Pregnancy occurring in women in this disease seems to cause an amelioration of the symptoms, probably due to the fact that this condition requires and uses up a certain amount of extra thyroid secretion. The symptoms are also better during menstruation.

Persistent tachycardia cannot fail to cause weakness of the cardiac muscle and dilatation sooner or later. Likewise hard work or labor will tend to hasten this cardiac weakness, and then all of the symptoms of cardiac dilatation occur. Progressive loss of weight, showing the nitrogenous waste that is going on, produces neurasthenia and, finally, permanent invalidism. Diabetes is a serious complication.

Treatment.—In the first place can this disease, or does this disease, cure itself? I believe that it does. Hence the lauding of so many different methods of treatment as giving good results. Moreover, as this disease tends to show temporary improvement, we must take into consideration this fact in estimating the value of any special treatment. If we believe this disease is caused by a hypersecretion of the thyroid gland, we must also believe that cases recover by the diminution of the amount of this secretion, possibly by atrophy of, or connective tissue-formation in, the gland. Anything that will take up or utilize this secretion, as pregnancy, will improve the case; and as this gland naturally atrophies in old age, age would certainly be a natural cure. I believe that in suspected cases or before the complete development of the case, if we have reason to believe that there is a hypersecretion of the thyroid, the feeding of thyroid gland should increase the symptoms. With our diagnosis thus made we would know how to treat the case. If the symptoms are thoroughly developed, the indications for treatment are: (1) To reduce or stop, if possible, this hypersecretion of the thyroid gland. (2) To prevent complications. (3) To strengthen and build up the system already worn out or debilitated.

In the first place, anything that will tend to increase the outflow or output of this secretion or stimulate the gland to further secretion can do nothing but harm. This is often seen by applying electricity locally, or by considerable manipulation of the gland, or by the taking of alcohol, or by anything that tends to further dilate the blood-vessels, stimulate the heart, or to irritate the gland. Anything that quiets the circulatory system without putting more blood at a greater tension into the head will do good. This does not mean that every case of cardiac palpitation in exophthalmic goiter should have digitalis or some equivalent, because I believe that in the cases without dilatation or without real cardiac weakness these drugs will often cause more headache and more cerebral trouble than before. With cardiac dilatation digitalis or its equivalent always does good, but strophanthus often acts more satisfactorily. It can readily be seen that with this treatment we are symptomatically treating the case, that is, combating the rapid heart and the dilated condition of the vessels without eradicating the cause of this condition. Our strongest adjuvant in bringing about this quiet heart-action and the diminished irritation and excitability and therefore hypersecretion of the thyroid is absolute rest in bed, mental as well as physical rest, for anything that excites this easily excitable heart will add to the unpleasant symptoms.

Now, as to any possible treatment to actually prevent this gland from hypersecreting, we naturally turn first to organic extracts. I do not believe that thyroid extract can do anything but harm except in cases in which the active stage of exophthalmic goiter is passed and a stage of

diminished secretion and possibly mild myxedema is present. We have all seen these cases of exophthalmic goiter, and I have one now under observation that is thriving on thyroid extract, whereas all my other cases are made worse by it. The patient has some palpitation of the heart, and an enlarged thyroid, but no headache; she is growing stout, sleeps well, but is very weak. Hence, I believe if there is any value in the use of thyroid extract in the treatment of exophthalmic goiter, it is at a time when the gland is the seat of sufficient connective tissue or colloid degeneration to impair its secretory functions.

Recently Lanz[14] of Berne has experimented with the serum of animals deprived of their thyroids, which serum consequently, he says, contains the toxic substances capable of neutralizing thyroidal hypersecretion. On this theory he gave to three patients the milk from goats deprived of their thyroid glands with good results.

Theoretically, the suprarenal extract or substance should be good treatment for exophthalmic goiter where the vasodilating element of the thyroid is increased, suprarenal being a vasocontractor, but Moore[15] and Purinton have proved that this vasocontracting element of the suprarenal is not absorbed by the stomach; hence, if this treatment does any good in hypersecretion of the thyroid, it is some other and not the vasocontracting element. Therefore, I cannot but believe that clinicians who have had much success with suprarenal treatment in Graves' disease happened to give this substance at a time when the symptoms were ameliorating. Personally, I have seen absolutely no results from the use of suprarenal extract in this disease.

The thymus gland treatment of exophthalmic goiter is beginning to have a large backing, and in several of my cases I believe that the whole condition has been improved by this treatment, one or two tablets being given daily. Perhaps one of the first in this country to recommend thymus treatment in this disease was Dr. S. Solis-Cohen.[16] He reported that he had treated twelve cases of exophthalmic goiter with thymus gland. Whether this gland slows up, or diminishes, or combats the secretion of the thyroid, we do not know. It certainly does not contain iodine.

Other drugs which will diminish the secretion of this gland, but unfortunately at the same time upset the secretion of other glands, are morphine, codeine, belladonna, and hyoscyamus or the alkaloids of the latter. Good results have undoubtedly been obtained from any of these four drugs because of the diminished secretion. Theoretically, were we to use these drugs for this object morphine or codeine would be most indicated as not only diminishing the secretion but quieting the heart. Hyoscyamus and belladonna, especially the latter, must excite the heart while they are stopping the secretion of the thyroid, and the discomfort which results from pushing belladonna or hyoscyamus cannot recommend them as good treatment. Morphine will produce more or less of a habit, and except to tide over a certain period of exacerbation, is not often justifiable. Codeine will cause less general disturbance, but is less effective.

The immense amount of restlessness, cerebral irritation, excitation and hyperemia may compel the administration of bromides. They will always do some good, whether by preventing the hyperemia of the brain, or whether by combating the irritation of the nervous system caused by the toxic substances formed in such large amount by the thyroid, we do not know. It is purely symptomatic treatment, and, if pushed to any great extent, can cause nothing but debility.

The iodide treatment has many advocates. It probably does little if any good in small doses and in large doses can but increase the waste of the tissues and, if it does any specific good, it must be by causing atrophy of the gland and at the same time must cause atrophy of other glands. Good results have been reported from sodium phosphate, and theoretically this would be compensatory treatment considering the large loss of sodium chloride and P_2O_5 caused by the hypersecretion of the thyroid.

Electricity can only be a part of a general tonic treatment. General faradization can but do good if it does not increase the nervous excitability. Central galvanization of the sympathetic system possibly might do good, and faradization over the gland might possibly ultimately cause a better tone and contraction of the gland, but the stimulant action of the galvanic current locally with the negative pole active would be contraindicated, and with the positive pole active for the purpose of diminishing the blood-supply to the gland would be problematical.

As to operative treatment, I find but few believers in surgical interference with this gland for the ordinary symptoms of exophthalmic goiter. There can be no question of the advisability of removing a portion of the gland if there are pressure symptoms. Theoretically, if we find a cystic growth or colloid degeneration, or some enlargement of some portion of the gland, and such have been proved to be able to so irritate as to cause hypersecretion of the rest of the gland, it would be good treatment to remove that pathological portion. Dr. M. Allen Starr[17] suggests that some of the deaths after operation are caused by the handling of the gland causing an increased absorption of the secretion, thus poisoning the system.

Dana[18] says that he believes in cases that cannot rest or have proper treatment for one or two years the advisability of surgical interference should be considered; otherwise he believes it unjustifiable. Operation however may not completely cure.

To sum up, then, the best treatment in my opinion is rest, thymus extract in small doses, strophanthus, and bromides if must be. Permanent good results should not be expected for from one to two years, and even then relapses may

occur. The condition will always be temporarily better during menstruation and during pregnancy, and probably become permanently cured at the menopause. Complications, such as cardiac dilatation, should be treated concomitantly with the goiter. If diabetes occurs, perhaps codeine is one of the best remedies for both conditions. All uterine disorders should be treated.

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THE STATUS OF GENERAL ANESTHESIA IN 1900.

BY M. L. MADURO, M.D.,
OF NEW YORK.

THE anesthetist of to-day not only has at his disposal a considerable number of reliable agents for the production of general anesthesia, but also a great variety of methods for their administration. The custom of employing one anesthetic for all cases must now be regarded as a bygone practice. Our first and most important duty is the selection of the anesthetic which is most free from risk and danger. That brings us to the question which is the safest and most practicable that we possess to-day. The answer is undoubtedly nitrous oxide and ether. Nitrous oxide alone is admitted to be the safest anesthetic, and if its dangerous element, the asphyxial one, were cut out by the combination of oxygen we would here possess the ideal. The complication of apparatus in the latter prevents its more general adoption.

Nitrous oxide and ether is the more practicable and is a safe combination given by an up-to-date apparatus like Bennett's. This instrument has an advantage in the fact that deep asphyxia is avoided by the gas, the ether being turned on from a separate compartment in the same instrument and one is able to grade the amount of the ether. The method is further very rapid, consciousness being lost in an average of seventy seconds and secondary anesthesia being assured within three minutes. The disagreeable preliminary sensations of ether are done away with and the patient is ready for operation within a remarkably short time. Another advantageous feature of this American-made instrument is the fact that it is not bulky like its English competitor.

Nitrous oxide alone will undoubtedly keep its place as the anesthetic in dental work and in operations of short duration. Owing to the greater rapidity with which the phenomena of nitrous oxide make their appearance, there is greater difficulty in arranging them into groups or stages; they nevertheless occur, and a very deep narcosis with absolute loss of rigidity can and does take place; so that if the patient exhibits rigidity during an operation with nitrous oxide it can be put down to the fact of an incomplete narcosis. On the other hand a complete narcosis with gas being a very difficult matter and the asphyxia being alarming, it is always good advice to give the combination of either oxygen or ether where thorough relaxation is desired.

Chloroform is no longer the popular anesthetic it used to be. Experiments have recently proved that there is accompanying its administration a state of vasomotor dilatation which is apt to end in vasomotor paralysis if the drug is either carelessly given or the patient's arteries have at all the slightest tendency to an atheromatous condition. Therefore it is well to place the importance of the vasomotors on a par with the heart and insist on the thorough examination of the vessels with the sphygmograph. The sudden deaths we hear of during chloroform administration are due to this dilatation of the vessels; as described by Hare, the patient will bleed into his own veins. Chloroform in combination with other anesthetics, such as the A.C.E. mixture and the Schleich mixture, is open to the same objection, and it is for this main reason that the latter has been practically discarded since its introduction in 1897. Personally, since I brought it to this country and used it extensively for a year, I have every word of commendation for its use as I never had a bad result. The dissatisfaction that others have experienced can be explained in three ways: (1) Because men who had very little experience judged from a few cases. (2) Because some who might have used it, did not, condemning it on general principles, because they were averse to mixtures. (3) Because experiments were made with the petroleum ether which one observer stated to be lethal on administration to rabbits. The objections were refuted in one way and another, for the combination was only a mixture in the sense that the ether was in excess; the chloroform however was proved to be in perfect solution. Then the fact of its being a poison is true of any anesthetic pushed to the lethal dose; Schleich decidedly disproved its poisonous effects in small doses and held that the reason he used it in his mixture was because he found by experiments on animals that no other ethereal substance could be administered in such large doses without causing serious disturbances. Also it seemed to mitigate the action of the chloroform contained in the mixture and to dilute the other substances without interfering with their action. The new idea brought forth in this anesthetic by Schleich,

which is rational and needs further investigation, is the relation of the boiling point to the temperature of the body. It must be admitted that a narcotic with a boiling point of 15° C. (ethyl chloride) or one which boils at 65° C. (chloroform) must act in different ways on an organism the temperature of which is 38° C. Schleich found that when the boiling-point is higher than the temperature of the body the amount necessary to narcotize is less than when the boiling-point and temperature are equal. Again when the boiling-point is higher than the body temperature the deeper the narcosis. It is clear that a narcotic which rapidly evaporates is rapidly eliminated by the respiratory organs, and one which does not evaporate as quickly, remains longer in the system and becomes more dangerous with prolonged inhalation. I firmly believe that if we can in the near future adapt the principle of the relation of the boiling-point to the temperature of the body with the anesthetics we possess to-day we would see less alarming results. It has certainly been proved possible to change the boiling-point of any anesthetic to the desired degree, but the practice has not been carried out with any single anesthetic like ether which has a boiling-point of 34° C. Ethyl bromide exemplifies the foregoing principle, it possesses the relative degree (38° C.) and as a result we have an anesthetic which is quickest in action of all the other vapors and from the effect of which one recovers most rapidly. Schleich recognized this, but found that its inhalation was accompanied by bad effects due to the bromide. That point can be remedied by careful manufacture and Squibb furnishes the proper product. This anesthetic is especially useful in throat operations; one can obtain its effects in from twenty to forty seconds. The entire quantity, 10 to 20 grams, is poured on the mask, which should be tight-fitting (paper and towel). Note on administration the relaxation of the muscles of the neck and arms; when the pupils of the eyes, which are open, dilate and the conjunctiva begins to suffuse it is time to stop the administration. I shall later have occasion to publish my results in the use of this anesthetic.

Ethyl chloride has been used some in this country, alone and in combination with ether; its patronizers have been few and their reports have not yet been sufficiently encouraging. It is a proper moment here to urge the simplification of apparatus for administering anesthetics, especially that used for nitrous oxide and oxygen, in which I see a great future as the "twentieth century" combination. Who knows that before long the gases will entirely replace the vapors like ether and chloroform, which are no doubt more apt to injure the structures with which they come in contact. At present we must be content with nitrous oxide and ether which when given with the Bennett instrument represents the ideal form of up-to-date anesthesia. It is here noteworthy to remark that the amount of ether used is a great saving over the older methods, 3½ to four ounces sufficing for an operation lasting an hour.

In conclusion, I should like to urge the fact that too much stress cannot be laid on professional anesthetization—the employment of the specialist to administer the anesthetic, for, besides giving the operator, the family, and particularly the patient absolute confidence and comfort, it will certainly tend to efface bad results from unskilled work, thus establishing in this country an incentive to the growth of the "specialists in anesthesia" that will make them a distinct and representative body.

THE PHYSIOLOGY OF SLEEP.

By H. H. STONER, M.D.,
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Many ingenious theories have been advanced from time to time to explain the peculiar phenomena of sleep. The thyroid gland was at one time believed to possess the function of inducing this state. It was again attributed to pressure by fluid in the ventricles of the brain. Another hypothesis claimed that it was due to blood-pressure at the base of the brain. The theory, however, which at the present time claims the greatest number of advocates, is the cerebral anemia theory. During the period of sleep the brain is observed to contain much less blood than during the waking state, and investigators have rashly jumped to the conclusion that inasmuch as cerebral anemia and the period of sleep are coincident the phenomena of sleep might be rationally attributed to the diminished blood-supply.

The erroneousness of this conclusion is evident in those who have lost vast quantities of blood. Here the brain, as well as every other organ of the body, is highly anemic and yet there is no disposition on the part of the subject to sleep. On the contrary he exhibits every aspect of restlessness; he tosses from side to side in his bed; his eyes stare as in delirium; he moves his limbs about constantly; drops of perspiration stand out on his body and he feels that death is impending. If a diminished quantity of blood in the brain is the cause of sleep such a patient should feel a sense of drowsiness instead of the symptoms above described.

Recent discoveries in the anatomical construction and the physiological action of the nervous system give a clearer insight into the manner in which sleep is produced. Histologists have thought to demonstrate that the processes of associated nerve-cells are not united by anatomical union, but that they lie an appreciable distance apart and are brought into functional relation with each other in consequence of the impact of a stimulus. Thus, an impulse in passing from one nerve-cell to another is not accomplished as a continuous stream; it must halt at

the terminus of the axone process of the initial cell and effect a functional approximation of this process with the dendritic processes of its associated cell. The current may now pass into this secondary cell and so on until in like manner it finally reaches its destination. The nerve-cell with its dendritic and axone processes is now called a neurone. The two sets of processes usually arise from opposite poles of the cell. The dendritic processes take up the stimulus and convey it to the nerve-cell, whence it is transmitted to the axone process. The nerve current now passes along the axone process (also termed axis cylinder) to its terminal arborizations, which by the force of the stimulus is made to extend and come into functional relation with the dendritic processes of the next neurone in order, and so on in like manner is the means provided for the passage of the current over the various segments of the nervous chain. In this way a nervous impulse reaches the psychic elements of the brain.

It is manifest that should the stimulus fail to produce a functional approximation of the processes of associated neurones the current could pass no further and would necessarily fall short of the psychic precincts. The cerebral cortex furnishes the terminus of the sensory and the origin of the motor tracts. There are in the cerebral cortex, however, millions of neurones which are neither strictly sensory nor motor in function. They are the neurones which take part in purely psychic processes. A stimulus falling upon those psychic neurones disarranges the relative position of their processes which results in the production of a feeling which is interpreted as a sensation. Sensation, as every one knows, is the foundation upon which all psychic phenomena are built. Memory, revery, imagination, reason, etc., all have their fountain-head in sensation. Every psychic process being dependent upon sensation for its manifestation, and sensation depending as it does upon the make and break movement of neurones, both sensory and psychic, it becomes readily apparent what result would follow a failure of the processes of these neurones to meet in functional relationship. The *ego* would be utterly oblivious of the surrounding world. The phenomena of sleep I believe to be due to an inability on the part of the processes of the psychic neurones to be extended so as to bridge over the hiatus between them and so to carry on the functions of intellection. This occurs as the result of exhaustion of the cell of the neurone.

Dr. Hodge, in experimenting upon the nervous system of swallows, found that after a hard day's work the histological structure of the nerve-cells of these birds became profoundly modified. The nucleus became shrivelled and displaced, the cytolymph—the food product of the cell—in part or wholly disappeared, and the reticulated meshwork on which depends the mobile qualities of the processes lost its irritability to a degree more or less limited. As a result of these changes the neurone is necessarily incapacitated more or less for the performance of its function.

The cell of a neurone, like any other cell, cannot go on continually in the performance of its function; it must occasionally cease from its labor and repair the loss it has sustained during its period of activity. The period of rest and recuperation of the cells of neurones, especially of those which are implicated in psychic processes, corresponds to the period of sleep of the individual. During every moment of the waking state the psychic apparatus is shaken by the stimuli to which it normally responds. Sensations, both common and special, are continually pouring in upon it, the ratiocinative processes now hold sway, and again the mind is occupied in the promulgation of volitional mandates, so that at the end of fourteen to eighteen hours of this incessant mental turmoil the cells of the psychic neurones are so far exhausted that they no longer readily respond to the stimuli of the environment. It is with difficulty that the processes are now made to extend and close up the gap between related neurones. Stimuli which ordinarily awaken the psychic apparatus into activity now fail to find their way into its precincts. The processes of the psychic neurones fall so far asunder that ordinary stimuli cannot cause them to meet in functional relation. The recuperative processes in the neurone then begin. Constructive metabolism takes up the process of removing the worn-out particles of the cell and of replacing them with new material. While this process is going on the neurone is absolutely dead to the outside world; its processes are so far retracted from others of its kind that outside stimuli cannot find their way to it.

The individual is now said to be asleep. His auditory centers no longer respond to sonorous waves; his common sensory neurones are no longer capable of transmitting stimuli to the center, and, save a few isolated areas of psychic neurones which keep up a feeble flow of thought known as dreams, the whole nervous system is in a state of functionless abeyance. This state prevails until such a time as the nerve-cell has been restored to its wonted activity, when its processes gradually become again extended, the ordinary stimuli of the environment now cause the processes to come into functional approximation with each other and the sleeper awakens. He now arises from his couch fresh and buoyant; problems which to him were insoluble the previous evening now clear up with astonishing lucidity; conclusions which appeared rational when he went to bed are now seen to be monstrous vagaries. He is now thinking with a refreshed and invigorated brain; his thoughts flow freely without any apparent effort and instead of the pessimistic views of the evening before he now sees the world in all its roseate aspects.

If the theory herein expounded is correct, and there is evidence upon every side to prove that such is the case, then sleep, instead of being the result of an outside influence exerted upon the brain as a whole, is due to metabolic changes which take place in the body of the nerve-cell as the result of normal fatigue.[1]

CLINICAL MEMORANDUM.

AN ATTACK OF URTICARIA OCCURRING IN THE TROPICS SIMULATING ANGIO-NEUROTIC EDEMA.

By JACOB S. GREEN, M.D.,
OF CENTRAL AMERICA.

Mr. D. came to me for treatment for what he called "prickly-heat." He complained of an intense itching and desire to scratch his entire body. This attack he said had suddenly come on the day he consulted me. The patient was a well-developed man, twenty-three years of age, plethoric, and had been taking very little exercise, whereas formerly he had exercised a great deal. Upon examination I found his face, body, and limbs covered with wheals of irregular shapes and various sizes, the largest being as large as a ten-cent piece. His temperature was 38° C. (100.4° F.) and there was a slight gastrointestinal disorder. He informed me that for a few days previous he had been indulging in claret wine with his meals, which was contrary to his usual custom at the table in the tropics. I advised a farinaceous diet and instructed my patient to take Epsom salts for a few days before breakfasting and to bathe his body with bay-rum. The next morning he returned to me with an increase of symptoms. I found the genitalia edematous, without pain on pressure, and the itching was more intense than on the day previous. I advised bathing the body with spirits of camphor. In the evening I was called to see him and found him in bed with his face swollen and particularly the eyelids and lips. He could hardly open the former and the latter he said felt very thick. The next morning all traces of the swelling of the genitalia and face had entirely disappeared, but the urticaria was still troublesome, it being relieved whenever he used the spirits of camphor. His hands were then very much inflamed and burned and itched greatly. His feet were in a like condition. I inquired into his family history regarding angio-neurotic edema but found it negative. I kept him on a light unstimulating diet and purged him freely. The next day he was much improved and had but a few wheals on his body. On the fifth day my patient was better. During no time was his temperature above 38.5° C. (100.5° F.), and the itching was always worse at night, in fact being so bad as to interfere greatly with his sleeping. The climate at that time of the year was very warm and the atmosphere very humid and oppressive. These conditions combined with a full-blooded temperament of the patient, excited to a higher pitch by alcohol, a meat diet, and a lack of exercise no doubt in this case produced the vasomotor disturbance.

[1] Those on the extremeties had entirely disappeared. The genitals were free and did not longer require any lotion although there was slight irritation. The eruption on the body which diminished hourly in extent continued to be somewhat irritable.

MEDICAL PROGRESS.

Amylen Hydrate in Diabetes Insipidus.—W. Niessen (*Therap. Monatshft.*, August, 1900) relates the case of a patient suffering from polyuria who was given amylen hydrate for insomnia with the unexpected result that the symptoms of his disease at once retrogressed. Following an extensive trial, the author concludes that small doses in many cases bring about a temporary improvement in the polyuria and polydipsia and, in a few, a permanent cure, thus making this drug, among the many others, worthy of consideration. The only drawbacks are the disagreeable taste and the insolubility of amylen hydrate which can be obviated by ordering it in capsules, to be followed by a glass of beer or wine.

Secondary Hemorrhage Following Use of Suprarenal.—The gratifying results which have attended the use of the suprarenal extract in intranasal surgery have made the introduction of this drug most rapid and its use, undoubtedly, a permanent one. After considerable experience, however, it has been found by many specialists that there is an important danger to be avoided in the matter of a secondary hemorrhage. F. E. Hopkins (*N. Y. Med. Jour.*, August 25, 1900) cites several cases in which he has had serious results from two to six hours after the use of this drug in nasal operations and also gives reports from many other authorities who have had similar experiences. Although the simple spraying of the nose with a suprarenal solution in cases of acute rhinitis has sometimes been followed by a secondary congestion even worse than the primary condition, this is a rare exception and the author believes that the serious secondary hemorrhages occur in those cases in which cocaine and the suprarenal extract have both been used. It would seem that the powerful stimulation to contraction of the swollen mucous membrane, induced by the suprarenal extract, while equal to retaining a grip on the dilated vessels for a time, is unable to prevent indefinitely the paralytic stage following the use of cocaine. He suggests therefore that the nasal fossæ should be carefully packed after each operation and, to be safe, an astringent should be employed.

Treatment of Diabetes.—An anonymous original article appears in the *Practitioner* (August,

1900) upon the methods of treatment of diabetes mellitus pursued by many of the leading authorities at the present time. In Von Noorden's clinic each patient is put upon a standard diet to determine what is the most appropriate dietetic treatment for each case. They are divided into three classes, one in which the sugar in the urine entirely disappears, a second in which it is lessened, and a third in which the quantity of sugar excreted is still great. The first class is then allowed more carbohydrates until the point of tolerance is reached, while the last two are put upon a gradually more restricted diet until the glycosuria disappears or their nutrition prohibits a further reduction of carbohydrates. In seven cases bicarbonate of sodium is given in large doses to prevent hyperacidity of the blood. The power of assimilation of carbohydrates is increased by periods of abstinence and patients are, therefore, much restricted in diet for a few days at regular intervals. Dieulafoy believes that in severe cases the kidneys should be flushed out by drinking large quantities of liquids and he does not object to the use of milk. He gives antipyrin morning and night and sodium bicarbonate daily. Very different views are expressed in regard to the advisability of using certain foods, which contain small amounts of carbohydrates. Dr. Hale-White believes that levulose can better be utilized than dextrose and he sometimes uses inulin, a starch corresponding to levulose. Grube notes that the use of phosphate and carbonate of lime increases the weight of the patient and makes them feel better, but has no effect upon the excretion of sugar. The hepatic extract has been found of slight value by Gilbert in some cases of liver origin. It is generally believed now that antipyrin diminishes the amount of sugar, but it should be used only in the very severe cases and only for a short time. Boracic acid has been found of use in a few cases and the prescription used was:

℞	Acid Borici	gr. xx
	Glycerini	ʒi
	Liq. Arsenici Hydrochlor.	♏ v
	Liq. Strych. Hydrochlor.	♏ x
	Aq. ad.	ʒi.

The thyroid extract and pancreas have proven useless. Several cases of diabetic coma have been successfully treated by the use of intravenous injections of normal saline solution. About 900 to 1200 cc. are generally used and repeated for several days if necessary. In England a seven-per-cent. solution of sodium chloride is used and four ounces in twenty-four hours have been known to be successful. If the patient is not in full coma, subcutaneous injection is usually better. Dr. Hale-White believes the rationale of this treatment to be that the toxin or poison is diluted by the saline injection.

Uterine Adnexa in Fibromata.—Greio (*Archivio Italiano di Ginecologia*, No. 2, 1900) draws the following conclusion on this subject: (1) In fibroma of the uterus, the tubes and ovaries are always altered, even though it may be but microscopically; there is always a hyperplasia of the muscular fibers and of the mucosa; sometimes only the mucosa is involved; this hyperplasia is of the same nature as the hyperplasia of the uterine mucosa. (2) From these alterations are often due the catarrhal and inflammatory processes in the tubes and ovaries. (3) There may also be an atresia of the tubes due to the tumefaction of the mucosa, or a diffuse adhesive inflammation; cysts are often found, associated with uterine fibromata, due to changes in the Wolffian bodies, or to a dilatation of the lymphatics. (4) Ovarian alterations, macroscopically, consist of a slight enlargement, with the presence of small cysts, which may or may not contain pus. The histological alterations in the ovaries consist of dilatation and obliteration of the blood-vessels with a hyaline degeneration of their walls and a proliferation of connective tissue stroma; these alterations produce a diminution of the primordial follicles, and a miscroscopic degeneration and atresia of the vesicles of Graaf, with the formation of fibrous bodies. (5) Uterine fibromata influence the adnexa mechanically by interference with the blood-supply, due either to direct pressure or indirectly by torsion, as in pedunculated tumors, causing a stasis of blood in the uterine adnexa; this stasis may extend to all the contents of the pelvis, causing a concomitant endometritis or a chronic inflammation of the peritoneal cavity. (6) It is well to remember that ectopic gestation may occur in uterine fibroid conditions and must be differentiated from the real alterations in the adnexa.

Thyrotomy.—F. Semon (*Lancet*, August 11, 1900) says that the laryngoscope and internal laryngeal surgery have for many years supplanted external thyrotomy, especially in two of the latter's indications, namely, the removal of foreign bodies and the ablation of benign growths. In fact authorities like Professor Paul Bruns prefer internal laryngeal means even for malignant neoplasms. Improved technic both of the operation itself and of the after-treatment has done away with most of the objections which previously had to be admitted as in force. All indications for an operation are facultative when another and compulsory where no other method may be substituted. Under these two categories the indications of thyrotomy may be regarded (1) foreign bodies in the larynx; (2) injuries to the larynx; (3) laryngocele; (4) stenosis of the larynx; (5) acute laryngeal perichondritis; (6) laryngeal tuberculosis, including lupus; (7) scleroma of the larynx; (8) benign; (9) malign new growths of the larynx. Foreign bodies should always be removed when possible by the natural path. When this is not practicable we have at disposal tracheotomy, dislodgement through the wound or from above or through a thyrotomy. Each case is a law to itself, the kind, site, impaction of the body and the result-

ing symptoms determine what shall be done. Injuries of larynx may be repaired, fragments ablated or apposed and maintained in apposition by a thyrotomy. Laryngoceles or air-cysts of the larynx are very rare and still more seldom do they cause dangerous symptoms, but in such circumstances would be a reason for thyrotomy. Laryngeal stenosis due to tuberculous or syphilitic ulcers or scalds and burns of the mucosa, fractures, adhesions inflammatory or congenital, malformations, etc., will readily be managed by a thyrotomy. Certain cases may be handled by dilation with O'Dwyer's or Schrötter's tubes or by intralaryngeal approach, but in the main freedom of access is gained by the open method. Acute laryngeal perichondritis, especially when abscess and necrosis ensue, is readily treated thus because evacuation of pus, removal of necrotic tissue, drainage and after-treatment are so readily carried out. Tuberculosis of the larynx, including lupus, yields good results to thyrotomy when the general strength of the patient is good, very poor results when the systemic disease has gone far. Hence the latter condition is an absolute contraindication of it. Another difficulty is the frequency with which the wound itself becomes a tuberculous sinus and requires much after-treatment to cure. Scleroma of the larynx is very rare. Thyrotomy followed by systematic dilatation should relieve or cure. Benign and malign neoplasms are very likely the greatest field for this operation, because it gives wide exposure and free field.

Koplik's Spots and Measles.—Koplik's spots consist of irregular spots of a bright red color, with a minute bluish-white speck in the center of each, which appear on the buccal and labial mucous membrane during the invasion of measles from twenty-four hours to five days before the cutaneous outbreak and fade away as the skin eruption reaches its height. These spots vary in diameter from 0.2 to 1 mm. and are found to consist of bacteria and epithelial scales. They cannot be removed by rubbing with the finger. At first there may be only from one to six of these spots, but they may increase in number until they cover the whole inner surface of the cheeks and lips and coalesce so that the whole buccal mucous membrane becomes of a uniform red color studded with myriads of these bluish-white specks. The combination of a bluish-white speck in a rose-red spot is absolutely pathognomonic of the invasion of measles. Jose L. Hirsh (*Phila. Med. Jour.*, August 25, 1900) says that the diagnostic value of this sign does not seem to be generally appreciated. He thinks these spots on the buccal mucous membrane are alone significant and pathognomonic of beginning measles, and says that, although he has never been able to see them with an artificial light, they are easily visible in strong daylight. He says that this characteristic eruption can be easily distinguished from all other eruptions occurring in the mouth by the peculiar bluish-white speck which is in the center of each red spot. The absence of Koplik's spots precludes the diagnosis of measles, while their presence as surely establishes the invasion of measles. The writer cites some interesting statistics by a number of investigators. He has found these spots present in every one of between forty and fifty cases of measles, but never in cases of any other disease. He reports in detail five cases which showed these spots and had measles; two cases in which the absence of Koplik's spots caused another diagnosis to be made which was afterward confirmed; one case of measles, in a colored boy, in which the presence of Koplik's spots was necessary for a diagnosis as the cutaneous eruption was atypical and hard to see; and a case in which the spots were present during the invasion of a second attack of measles. By this sign measles may be diagnosticated from one to five days before the cutaneous outbreak. Hirsh presents the following conclusions: (1) An eruption, limited to the buccal and labial mucous membrane and characterized by the presence of irregular red spots with a bluish-white center, is always present in beginning measles; (2) these spots are present from twelve hours to five days before the cutaneous outbreak; (3) the number of these spots bears no relation to the severity of the attack; (4) these spots will be found in no other condition of health or disease.

Carbolic Acid and Mastoiditis.—W. C. Phillips (*Med. Rec.*, August 25, 1900) says that pure carbolic acid is without peer in the treatment of suppurative conditions about the ear and its accessory channels. It may be applied with a cotton swab or by an atomizer, allowed to remain *in situ* thirty to sixty seconds and neutralized by alcohol. Under its use unhealthy granulations become normal, discharge ceases and often secondary operations are avoided.

Ichthargon.—This is a combination of ichthyol with a silver salt, which, according to L. Leistikow (*Monatshft. f. prakt. Dermatolog.*, August 15, 1900), is especially to be recommended in acute anterior gonorrhea since it possesses to a marked degree the antiphlogistic and antiseptic properties of its component parts and at the same time is no more irritating than the ichthyol alone. It can be had in the form of a dark brown, odorless powder, readily soluble in water and containing 30 per cent. and 15 per cent. sulphur in combination. In drawing conclusions from the numerous cases the author cites in full, it appears that in many cases ichthargon acts as an abortive; at all events a cure is reached in a remarkably short period and the disease is not prone to be complicated by other inflammations. It is not necessary to resort to the expectant plan of treatment at first, but injections, varying from 0.02-0.2 per cent. in strength, may be employed with success from the very onset. The author earnestly solicits a more extensive use of the drug by the profession.

Tumor Albus.—The common synonyms of this term, says F. E. Peckham (*Med. Rec.*, August 25, 1900) are white swelling and tuberculosis of the knee-joint. The important early symptoms are heat, swelling, tenderness, distention, bogginess in the absence of fluid, depression of the patella by swelling of tissues about it. When the joint is opened this is found to be due to the accumulation of a peculiar gelatinous material within the cavity whether fluid is present or not. The inner condyle of the femur is apt to be the more involved. This produces a condition simulating knock-knee, if at all marked. Lameness next appears and may at first be intermittent. With increasing irritability the flexor muscles become slowly contracted and then flexion and subluxation ensue and are characteristic deformities. Muscular atrophy distal and proximal to the joint becomes manifest. Locally temperature is appreciably elevated. By stimulation of the epiphyseal growth sometimes actual lengthening occurs for a time. Pain appears early and becomes greater and greater if treatment is delayed. Then appear anxiety, loss of flesh and strength, fever, anorexia, etc. This important disease is to be differentiated from synovitis, rheumatism, rheumatoid arthritis and hysterical joints. Synovitis, especially if the body resistance is lowered, is difficult to eliminate, but the patella here floats on fluid, is not surrounded nor covered by a boggy mass and hence strikes the femur with a distinct click. Motion is not much interfered with. Atrophy is absent. Acute rheumatism has a sudden onset with fever and more than one joint may be affected. Chronic rheumatism is clinically sometimes impossible to differentiate. In rheumatoid arthritis the bony spindle-form joint enlargement and the distinct bony crepitus due to erosion of the joint surfaces and the presence of the disease in several joints make up its salient features. Hysterical joints may be recognized only after watching the case. The treatment comprises conservative fixation, rest and protection, with tonics and fresh air, radical opening and scraping of the joint, excision in bad cases, amputation as a preservative of life.

Etiology of Anosmia.—The central course of the olfactory fibers is as yet too imperfectly known to allow one to localize the tracts and centers which control smell, hence the factors which cause disturbance of this sense cannot always be determined. A. Onodi (*Klin. therap. Woch.*, August 12, 1900) finds it convenient to divide anosmia into essential or true, mechanical or respiratory and functional. The first mentioned may be centric or peripheral and among its causes may be mentioned influenza, syphilitic processes in the nose, polypi, chronic ethmoiditis and atrophy of the mucosa for the peripheral types. Brain tumors located in the interior fossa, cerebral abscess, hydrops of the ventricles, syringomyelia, progressive paresis, cerebral tabes and senile atrophy, for the centric, are most common. The second group includes all those forms in which there are mechanical impediments to respiration; such as atresia of the choanæ, deviations of the septum, etc. Functional anosmia generally depends on hysteria, but may occur reflexly during menstruation, after removal of the Gasserian ganglion, cauterization of the inferior turbinated or ovariotomy. Parosmia and kakosmia may precede any form of anosmia.

Roentgen-Ray Errors.—In treating of the use and interpretation of the skiagraph, Carl Beck (*Med. Rec.*, August 25, 1900) says that its advent into the hands of surgeons has revolutionized at least the diagnosis of fractures. After an experience of nearly three thousand cases he has found dermatitis of rare occurrence and always due to some trophic disturbance in the individual. He has had two instances of circumscribed depilation, due to frequently repeated necessary exposures. The hair returned within a month. To interpret a skiagraph properly appreciation must be at hand of the facts that one is dealing with photographs of shadows and that each tissue casts one. Muscles and tendons have a large share in the difficulties of interpretation. The carpus, as an example, is especially apt to produce errors, the tuberosities of the trapezium, scaphoid hamulus ossis hamati, os pisiforme, eminentia carpi volaris and ulnaris double the thickness of the carpus, cause dark shadows and might lead to error. The foot is easily skiagraphed in the direction from the dorsum to the planta pedis as far back as the upper third of the metatarsus. Farther back the cuneiform and scaphoid and other tarsal bones bring in difficulties, so that lateral views must be taken to substantiate the other. Thus the astragalus, calcaneum, cuboid, scaphoid, fifth and fourth metatarsal bones are brought out clearly. Knowledge of the normal sesamoids is also essential in order not to be drawn into error by their presence. The os trigonum tarsi has also been the source of much difficulty and one must be prepared to meet it rather frequently. The practitioner must also be aware of the various other common anatomical abnormalities. A normal semitendinosus sesamoid bone occurs in 8 per cent. of all cases. The significance of the skiagraph in estimating the amount of functional disability is not always conclusive. Bony deformity may be present without marked or in fact any loss of function, in fact where function is perfect the union may be skiagraphically imperfect. On the other hand, marked depreciation of the use of a limb may occur by injury of the soft parts, whereas the skiagraph may be negative. Joints offer the next obstacle. The more complicated the joint the greater the difficulty and the more emphatic the indication for examining both sides. Old fractures can often not be diagnosticated, unless displacement and callus exist. Intra-articular fractures are especially difficult because the callus may hide the line and the joint complexities add still more to the problem.

Here again the normal opposite side should be skiagraphed and often the comparison of these with a skeleton will be essential to clear knowledge. In children and adolescents the years at which the epiphyo-diaphyseal bony union occurs must be known, together with the ossified bones at birth and the relation such diseases as rickets bear to ossifications and union. Foreign bodies require a skiagraph for each axis. A needle seen end on would appear as a point and be overlooked, side on as a narrow black shadow one inch or more long. In order to be of legal value the skiagraph must have records with it of the source of the current (battery, static machine or street), of the length of the spark of the induction coil, of the intensity of the tube, of the distance of the platinum disc of the tube from the plate, of the position of the object, of the kind of plates and of the time of exposure, together with full clinical and anatomical data.

Coating of the Tongue.—Although the modern physician attaches much less importance to the condition of the tongue than was the case formerly, and although a uniformity in the extent and character of the furring is hardly to be expected even in disease of the gastrointestinal tract, as an aid to diagnosis the tongue should not be overlooked or its appearance regarded as unimportant. J. Müller (*Münch. med. Woch.*, August 14, 1900) finds that but few healthy persons can boast of a perfectly clean tongue; in the majority a thick or thin deposit is found in the center and along the posterior portion, leaving the edges free. This more or less normal condition is not dependent, however, so much on a true coating but is caused by enlargement of the filiform papillæ whose surfaces are in constant desquamation. Between these papillæ mucus, epithelium, leucocytes and remnants of food, together with an extensive bacterial flora, are found. This forms the true coating which can readily be scraped off with a knife, leaving, however, in most cases a much more extensive fur consisting of papillæ, which cannot be removed. In disease the furring is most marked if the attack be acute, whether or not it be located in the alimentary canal, while in chronic digestive troubles the tongue is often no more coated than in health. An examination of the scrapings showed that they did not differ from those in health except that in gastric cancer and in pulmonary tuberculosis many leucocytes were found. The author believes that several factors produce the furring of disease. Owing to the diminished amount of food the patient takes the tongue is less frequently cleaned by the mechanical act of chewing. Also the mouth is often the seat of a desquamative catarrh which permits of an increase of the epithelial elements of the fur. To decide whether the condition of the tongue is normal or pathological it is best to scrape off part of the fur; in the latter case, much more can be detached than in the former. As far as therapy is concerned, the removal of a healthy fur is not to be practised since it will dispose to more marked deposition. In disease, however, it is best to clean the tongue with a dense and soft toothbrush which can reach the posterior portions.

Foreign Body in the Bladder.—J. H. Morgan (*Lancet*, August 11, 1900) describes a case of foreign body in the bladder consisting of a clinical thermometer. Had an X-ray photograph been resorted to the nature of the nucleus of the stone would have been found for both glass and mercury are very opaque to the rays. Foreign bodies are found oftener in the female than in the male bladder, probably on account of the shorter urethra and of the more frequent occurrence of hysteria. This patient had lumbar and hypogastric pain, alkaline, low specific gravity, purulent urine, slight rise of temperature at night, dysuria and frequency of urination. The treatment was irrigation with boric acid twice daily and boric acid and ammonium benzoate internally. Later lithotripsy when the nature of the stone was revealed. Recovery was complete.

On Epistaxis.—W. Lamb (*Birmingham Med. Rev.*, August, 1900) gives an excellent account of the arterial supply of the nose and dwells on the difficulties of checking hemorrhage owing to the vascularity of the cavity which is dark, full of recesses, difficult of illumination and freely open at both ends, while the lining membrane, especially that covering the lower turbinated body, resembles the erectile tissue of the corpora cavernosa. Constitutional diseases, with a tendency to hemorrhage or conditions of increased blood-pressure, may result in epistaxis, but most common are erosions of the mucous membrane of the septum, especially at its lower and anterior part, about half an inch from the entrance of the nostril. The reason for this is that this spot is most exposed to injury by the finger-nail when it is used to pick off the adherent crusts which form in the dry varieties of rhinitis. Bleeding from the upper and anterior regions is much less common and is generally associated with congestive head symptoms. In the treatment of epistaxis, the first point to decide is whether any treatment is needed. Patients in whom the epistaxis has relieved head symptoms should be allowed to bleed moderately. In other cases plugging the lower meatus and thus compressing the whole length of the inferior turbinated body is best. Plugging the posterior nares with Bellocq's sound is an operation which should be reserved for cases bleeding from the nasopharynx. Erosions of the mucous membrane may be touched with the galvanocautery at a very dull red heat. A chemical caustic which the author has effectually used to check bleeding is common precipitated sulphur. When applied to raw surfaces it forms sulphurous acid which exerts its powerful effects efficiently upon the tissues without causing any pain. Hot water, peroxide of hydrogen, and suprarenal ex-

tract may be tried; calcium chloride should be given internally in hemophilia, and turpentine in purpura.

The Pathology of Diabetes.—Although the true cause or causes of diabetes are very uncertain and indefinite, the malady is one in which experimental physiology is of great assistance in determining the nature of the condition, for artificial diabetes can be caused in a variety of ways. The recent experimental work is reviewed by J. R. Bradford in the *Practitioner* (August, 1900). The fundamental fact in the pathology of the disease is that the blood contains an excess of sugar which may theoretically be due to a number of causes: (1) Too great an ingestion of sugar so that the liver is unable to arrest it, either on account of the amount taken in or because of a functional derangement of the liver. (2) The excessive formation of sugar. It is believed by some that the liver is a sugar-forming organ as well as sugar-stopping, and that it can, perhaps pathologically, make sugar out of proteids and possibly fats. Thus this form of diabetes could not be entirely controlled by the amount of carbohydrates ingested. (3) Disturbances in the functions of the pancreas. Some contend that there is an internal secretion by the pancreas which assists in the oxidation of the sugar by the tissues. In favor of the first view are the many cases which have a glycosuria without many symptoms and which clears up when the ingestion of carbohydrates is controlled. In such patients it is possible that the maltose is converted into dextrose too rapidly for absorption by the liver or the liver-cells may be so deranged that they fail to arrest a normal quantity of dextrose and convert it into glycogen. In regard to the second explanation—that the glycosuria is due to hepatic trouble—it is abundantly proved that it may occur under nervous influences, inasmuch as a number of experimental lesions of the nervous system are capable of producing glycosuria. The passage of arterial blood through the portal vein has the same effect. Recently lesions of the pancreas have been proven to be efficient causes of glycosuria. It may be produced by extirpation of the whole gland or ligature of the pancreatic veins and it is now well known that the gland has an internal secretion the absence of which is followed by glycosuria. Lepine explains the phenomenon by saying that the pancreas produces a glycolytic ferment which is essential to the metabolism of sugar and prevents its accumulation in the blood. The pancreas is also supposed to secrete some important element into the lymphatic system for ligature of the thoracic duct also produces glycosuria, but it has been found by Gaglio that excision of the pancreas does not cause diabetes after ligature of the thoracic duct. A fairly satisfactory explanation of pancreatic diabetes is that the pancreas secretes into the lymph-stream an internal secretion capable of neutralizing a toxic body which is continually being absorbed by the intestine and which can in itself produce a glycosuria. It is thus necessary to suppose that the intestinal toxic substance is absorbed both by the portal and lymphatic systems.

Malignant Disease of the Stomach and Pylorus.—W. J. Mayo (*Annals of Surgery*, August, 1900) says that age has a more important bearing on carcinoma of the stomach than on the same disease in the lower portion of the gastro-intestinal tract; in the former locality it is peculiarly a disease of middle and later life; under thirty it is most rare. The progress of the disease varies greatly and is materially affected by the age of the patient, the situation of the growth, and its histological structure. Death may follow in three months from the first symptoms, or it may be delayed to two and one-half years—the majority die within the year. A suspicion of gastric cancer should cause the physician to send the patient to a surgeon for exploratory incision to complete the chemical examinations already supposedly made in a suspicious case; the same principles should govern here as in probable malignant disease of the breast or uterus. In a general way it can be said that the early medical diagnosis of cancer of the stomach does not depend on any specific sign or symptom, but rather on a collection of facts, each one of which, if taken alone, would have but little value; moreover, most of the symptoms are not developed to a characteristic extent until late. If a person of middle or advanced life of previous good digestive power begins to complain of pain in the region of the stomach, difficult digestion and loss of appetite, with a progressive loss of flesh and strength, with more or less vomiting, cancer of the stomach is to be suspected; unfortunately if all these symptoms are present, the probability is, that it is too late for a radical operation to be of any lasting avail. The curability of cancer of the stomach depends on the histological structure of the neoplasm; its location; extension to neighboring structures; lymphatic infection; and the general condition of the patient. Prompt and early radical surgical treatment affords the only check to the ravages of this dread disease.

Disease of Upper Air-Passages and Diphtheria Bacillus.—Evidence that a single organism may under certain circumstances be capable of producing widely differing disease states is rapidly accumulating and a series of five cases reported by Neisser and Kahnert (*Deutsche med. Woch.*, August 16, 1900) seems to confirm this already suspected property in the diphtheria bacillus. The patients in question suffered from a well-marked degree of atrophy of the mucosa accompanied by hypertrophy of the follicles and oversecretion of thick, stringy mucus which exhibited a tendency to desiccation and the formation of crusts. The lining membrane of the nasopharynx, pharynx and upper larynx, was invaded in all the cases which also were characterized by resistance to

treatment and spontaneous remissions in summer. Subjectively dryness of the throat, pain and hoarseness were complained of. On bacteriological examination the secretion was found to be rich in organisms which apparently were true diphtheria bacilli and an antitoxin reaction could be obtained from the blood.

Gastric Carcinoma Simulating Esophageal Stenosis.—In this case, described by R. Schütz (*Deutsche med. Woch.*, August 16, 1900) a dilatation of the lower portion of the esophagus served to supplement the diminished receptive capacity of the stomach which was greatly contracted owing to a malignant growth starting at the pylorus and invading nearly the whole wall. The anamnesis was very atypical inasmuch as there had never been vomiting or any symptoms pointing to a secondary dilation and a gradually increasing dysphagia first for solids and later for fluids seemed to locate the disease in the esophagus. On autopsy it was found that although no tumor had been palpable during life the stomach had been transformed into a rigid thick-walled vertical tube while there was evidence of great relaxation of the lower esophageal wall. The peculiar position of the stomach produced through the contraction of peritoneal adhesions must be regarded as the crucial factor in the clinical picture, for owing to its vertical direction it became simply a continuation of the esophagus and although a high degree of motor insufficiency existed no dilation was produced. The seeming esophageal stenosis which had, however, never presented any difficulties to the passage of either hard or soft bougies resolved itself simply into atony of its muscular coats.

Chills in Typhoid Fever.—In southern latitudes the exhibition of chills in typhoid fever is usually considered to be due to a combination of malaria with the enteric fever. This double infection, writes W. W. Ford (*Montreal Med. Jour.*, July, 1900), may occur, but often the chills are due to septicemia either from absorption of toxic products or from the growth and development of the typhoid bacillus in the blood. A case of this kind occurred at the Johns Hopkins Hospital, showing marked Widal reaction, typhoid bacilli in the urine and in the blood, and typhoid ulcers at autopsy. The rigors were always very severe, the rise and fall of temperature abrupt, and accompanied by shaking chills and sweating. Such pronounced chills are seen only in malaria and septicemia and the former was ruled out by the constant failure to find the parasite in the blood and the lack of any lesions at autopsy associated with malaria. Chills in typhoid are usually ascribed to the more serious complications such as cerebral thrombosis, hemorrhages, or intestinal perforation. Yet none of these were present, and the finding of the bacillus in the blood corroborated the diagnosis of typhoid septicemia.

Adiposis Dolorosa.—V. Giudiceandrea (*Revista di Pat. nerv. e ment.*, July, 1900) records the case of a woman, aged forty-four, whose hereditary and personal history prior to the beginning of the symptoms was negative; eight years ago she began to have sharp shooting pains in the sacral region extending down into the left thigh; the pains at times were so severe as to require the use of morphine; these pains were paroxysmal for two years, when she noticed a falling out of her hair; about this time the pains again became acute and continued, involving now the right lower extremity as well, until three years ago the pains had involved most of the body; *i. e.*, the abdomen, the breast, the shoulder-blades, and even the hands. Contemporaneously an increased deposit of flesh was noted, first in the left buttock and thigh, and then in the right thigh; the pains always grew worse prior to a noted deposit of fat; finally the abdomen, the breasts, the shoulders and upper extremities were the seat of fatty deposits, until locomotion became painful because of these deposits and the concomitant pains. Examination showed her skin and mucous membranes to be pale; the subcutaneous tissues were found to be the seat of enormous fatty deposits somewhat irregularly situated. The thyroid gland was normal in size; there were no ataxic symptoms; reflexes were normal; tactile sensibility was marked, indeed being most painful over the areas of fleshy deposit, while heat sensibility was diminished; electric examination was normal, as was her psychic state; the heart was hypertrophied; the liver and spleen were slightly enlarged. Under continued thyroid gland administration the patient improved considerably, both as to her weight and the hyperesthesia previously existing. The author's conclusions are that adiposis dolorosa usually appears in women between the age of thirty-five and sixty years; syphilis and alcoholism are supposed to be predominating causes; traumatism may be a cause also; only seventeen cases have been recorded. The fatty deposit manifests itself in a nodular, a diffuse, or a combined nodular and diffuse form; the pains are either spontaneous or due to pressure; the pains may precede or be coincident with the fleshy deposits; pressure pains are most severe where the fat deposit is most abundant; the disturbances of sensibility are many as are those of motility, the latter being due to mechanical interference of the fatty tissue; muscular atrophy may occur from disuse. The heart, spleen and liver are usually enlarged; the temperature is generally normal; the pulse is frequent; the blood is likely to be deficient in red blood-cells; the course of the disease is usually progressively fatal, although it may be altered by organotherapy; the diagnosis is fairly easy but this disease must not be confused with myxedema, acromegaly, elephantiasis or obesity. The treatment is largely empirical, electricity, massage, tonics, baths, and thyroid extract, offering the best results thus far obtainable.

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SATURDAY, SEPTEMBER 8, 1900.

THE PLAGUE.

THE appearance of the plague in Glasgow adds another and very important port to the number already on the alarm-list of quarantine officials. The inconvenience and delay to which passengers of the "City of Rome" were subjected on its arrival after the news of the plague were trifling things in comparison with the importance of making the most rigid examination of every passenger and member of the crew of ships sailing from any infected port.

This is no summer scare to fill vacant spaces in newspapers. It is a very serious danger, but the fact that the hue and cry last November, when two cases came with the coffee cargo from Santos, soon died away, and the fact that the scare this summer will doubtless amount to nothing, must not delude the public into thinking that the health officers are "crying wolf." The scare will come again, year after year, with the deadly persistence of the *bacillus pestis* and the greatest danger is that familiarity will breed contempt, and that at some small, not too sanitary port, where the sentry duty weakens, through constant, unrecognized alarms, the plague will touch our shores and become acclimatized.

The position and commerce of the North American continent are such that every additional infected port in any part of the world threatens our shores.

Five years ago this present outburst of the plague started in India; to-day it has spread to Asia and Africa until it has reached the limits of their coasts. Hong Kong and Japan threaten us on our Western and most susceptible shore; Alexandria, the most frequented of the African plague ports, with Oporto and Lisbon and other ports in Spain, threaten our Eastern coast, especially through their commerce with South America where the plague has appeared in Rio Janeiro, Asuncion, Santos, and other insanitary cities.

At the present time the problem is not so much, what shall be done during the temporary fright this summer? but what provision shall be made in every seaport of the United States during the next ten years to guard against the pertinacity of the plague?

The plague that started in the sixth century in Egypt and which caused 10,000 deaths in a single day in Constantinople took thirty years to overrun Gaul and Spain, and the second great plague that started in China in 1334 took thirteen years to travel to Europe; but when it finally did arrive 25,000,000 died. The plague that came two years ago to Vienna, done up in test-tubes for inoculating animals, and that caused the death of the bacteriologist who experimented with it as well as of the attendant who nursed him, was immediately stamped out to the great relief of the excited Viennese; but it was an accidental and not an acclimatized outbreak. Even in Glasgow the few cases reported need not worry the British Isles just yet, for the bacillus cannot have become accustomed to the new climate and conditions. The plague will disappear from Glasgow just as it disappeared from San Francisco, but that must not cajole a too-easily-frightened people into a too-easily-won relief. The plague is a thing with the persistence of half a century in its vitality and the Government should recognize this and take precautionary measures, which, however expensive and irritating and inconvenient they may be, cannot compare with the terror and horror of the "Black Death."

These measures should be, first, the establishing of strict and efficient quarantine for a term of years at every small port, especially on our Southern and Western coasts, in Cuba and the Philippines, as well as a cooperative quarantine on the boundary of Canada, where it is trusted

the smaller ports will also be strictly watched. Second, the introduction of sanitary and hygienic improvements in crowded and unclean seaports, especially in the warmer climates. England is depending more largely on its cleanliness than on elaborate quarantine for immunity. Third, the study of how best to destroy rats, mice and fleas, both on land and sea, as these have been proved to be most pernicious carriers of the disease. Fourth, the enforcing of an absolute isolation of all cases coming from badly infected ports until the term of incubation has passed. It was a source of surprise that when the plague was raging in ports all about, Singapore remained immune, even though ships with 3000 to 4000 coolies were arriving from China; but the immunity was due not to disinfection of cargoes, which was little practised, but to the fact that all passengers were detained nine days before landing, thus giving the disease time to appear before they left the ship to scatter it broadcast. Lastly, we would recommend a careful study of the symptoms of the plague, especially of the hitherto rather overlooked preliminary symptoms of the respiratory tract, with a view to early diagnosis.

We cannot too heartily commend the active work done by the Marine Hospital Service in their studies of preventive inoculation for the plague and we confidently look forward to the time when this final means of protection shall be assured to us.

SUMMER INFANT FEEDING.

A great change has come over expert opinion during these last few years with reference to infant feeding in the warm weather. Medical men who recall the enthusiasm with which the sterilization and afterward the pasteurization of milk for infant feeding were taken up by the pediatrists at the beginning of the present decade can scarcely help being surprised at the position now generally assumed by specialists in children's diseases with regard to this important matter of infantile diet. The change, we are happy to say, is not the result of caprice nor the mere desire for novelty. It represents a distinct advance in the knowledge of infant dietetics although it seems to be only a return to methods of feeding which have been in general use for a long time before science invaded the field of child food preparation.

The change is due to two principles that now seem to have been definitely established. These are, first, that the mixture of a certain amount of some cereal with cow's milk for babies' food instead of being harmful is beneficial. Second, while sterilization or pasteurization of milk does destroy all living germs in it, neither process destroys the toxins that may have been elaborated by the germs during their period of vital activity. Some of these toxic substances are very virulent. Because of them or because of some change in the milk under the influence of heat, sterilized or pasteurized milk often becomes markedly indigestible. Certain infants seem to receive no nourishment from it. It has taken a good while to realize the truth of these principles. Their acceptance however promises to be of the greatest practical importance in the nutrition of infants.

With reference to the mixture of cereals with cow's milk for very young children there are authorities on the subject, like our own Professor Jacobi, who have always insisted on the benefit to be derived from them. When it seemed demonstrated that the infant secretes no starch-splitting ferment and can therefore make no use of starchy substances, these men on the strength of their clinical observations still recommended the use of a certain amount of cereals. If they had not a chemical significance at least they were of physical import in the child, digestive economy, for it was certain that their presence greatly aided the infant nutrition. If they were not absorbed at least they served the very advantageous purpose of mechanically breaking up the coagulum, which in cow's milk is prone to be dense. At the present time there are advanced on experimental and clinical grounds additional good reasons for the employment of cereals in infants' foods.

The diastasic ferments that aid in the digestion of starch have been proved to be present at a much earlier period in infantile life than has been claimed. Even the very young infant is able to avail itself of a certain amount of starchy material. An important although hitherto unsuspected action of carbohydrates when added to cow's milk is that they decrease nitrogenous elimination. When maltose was added to the cow's milk of a baby's dietary Keller found that the elimination of nitrogen was reduced to less than one half what it was before. The striking difference between mother's milk and cow's milk as far as regards infant nutrition seems to be that while most of the nitrogenous material

absorbed by the breastfed infant is retained—a percentage of retention as high as 80 per cent. has been noted—the bottlefed infant on a diet of cow's milk alone retains very little of the nitrogenous substances absorbed—in one case only a trifle more than 5 per cent. of the amount supplied. This rule applying to the retention of important albuminous material holds also for children who are not well. In them the nitrogenous waste when on an exclusive cow's milk diet is prone to be excessive, sometimes reaching 99 per cent. of the amount ingested. The addition of a carbohydrate to the food at once reduces this waste and leads to the retention of albumins in the system.

Professor Heubner, of the Children's Clinic at the University of Berlin, arrives at a similar conclusion as to the value of carbohydrates in infant's diet from a very different method of observation. Heubner studied the complete metabolism of the infant when placed in a glass chamber connected with a respiration apparatus. As the result of his experiments he emphasizes the importance of non-nitrogenous foods because they protect the albumins from useless decomposition. Infant growth requires the retention of considerable amounts of albuminous materials in the system, but these are not retained unless non-nitrogenous foodstuffs in certain quantities are being constantly given. It seems probable that fats are as important as the sugars in preventing useless decomposition of nitrogenous substances, but both must be given to insure the retention of the proper amount of albuminous material within the child's body.

These latest conclusions of experimental pediatry seem thoroughly rational. They agree much better with the traditions of infant feeding than did the seemingly more scientifically exact regulations of a few years ago. If applied with a due admixture of common sense they will undoubtedly prove of the greatest service during warm weather. We have now come to the realization that sterilization or pasteurization may render less harmful but cannot change the character of an originally contaminated milk. What is needed for successful infant feeding is the purest possible milk, kept on ice from the time it is gathered until its distribution, and not allowed to stand in the warm air of a house for hours before being used. This, mixed with the amount of cereal in the form of barley-water or something similar that has been found to agree with the particular child and with the amount of cream that seems advisable for the special milk, and the little patient will do much to ward off the dangers of an unsuitable diet during the warm weather.

CONCERNING LAMINECTOMY IN FRACTURE OF THE SPINE.

In spite of our progress in the past quarter of a century, we still continue to adhere with fruitless tenacity to enough antiquated and properly obsolete procedures in both medicine and surgery to arouse the suspicions that a certain amount of this progression is alarmingly crabwise.

It is certainly discouraging to think that since the operation of trepanning the vertebræ for fracture was attempted by Mr. Henry Cline, at St. Thomas' Hospital, in London in 1814, sufficient good has never come from it up to the present day to warrant the performance of it—or its modern counterpart laminectomy—except in certain cases whose number is dangerously near the vanishing point. Why, therefore, an operation so absolutely barren of results should continue to be perpetuated by generation after generation of surgeons surpasses understanding. Too often, we fear, it is undertaken on the flimsy ground that it offers the last chance. In regard to this plea we can only say that the surgeon who makes it must be woefully unmindful of his own previous experience as well as of the accumulated experience of the century, for certainly we can think of no operation in the entire category upon which we may count more surely to remove the last chance, than upon the one in question.

When we read some of the most modern writings upon the subject in which the advantages and disadvantages of laminectomy for spinal fractures are discussed with as much naïveté as if the author had embarked alone upon a tour of discovery and had penetrated to the heart of some hitherto undiscovered country, we shudder to think of how quickly even middle-aged medical writers pass into oblivion. Many years ago one of the shining lights among English essayists, William Hazlitt, complained bitterly of the neglect of the age for old writers and accused his contemporaries of an assumed and insincere admiration for these writers to whose names they always took care to refer with a proper show of reverence, while they carefully refrained from any actual acquaintance with their works.

Whether Hazlitt's criticism also applied to

the medical profession of the day we do not know, but it certainly does to ours, and it can hardly be gainsaid that a closer intimacy with the work of our medical great-grandfathers would exert a praiseworthy restraint upon our actions. The results of our ignorance of these ancient tomes are always amusing and not seldom redound but seantily to our credit. Witness the logomachy which waged two or three years ago between two of the best known French surgeons before the highest medical tribunal in France, for priority of claim to a procedure (the forcible reduction of vertebral gibbosities in Pott's disease) which, according to authentic records, Hippocrates adopted from a predecessor.

With regard to laminectomy for spinal fracture, a brief historical retrospect reveals some interesting facts. Away back in the second decade of the century it was the unfortunate rock upon which split such eminent authorities as Sir Charles Bell and Sir Astley Cooper; the one contending for, the other against, the operation with a bitterness of spirit sufficient to make the latter give vent to such epithets against his adversary as "blockhead" and "foolish person," while Mr. Bell gave the retort discourteous by accusing his calumniator of "gross ignorance and a wrong mode of teaching."

In those early days who was to decide when such giants fell out? From their time on, however, every observer of note has condemned the operation in the class of cases under consideration in unequivocal terms, and we need come no further forward in the century than 1845 to find in the Fothergillian Gold Medal Essay on the Curvatures and Diseases of the Spine by R. W. Bamfield, Esq., London, this condemnation expressed in terms as scientific, and for reasons as cogent, as any that can be advanced at the present hour.

That the next thirty-four years had done nothing to remove this surgical anathema is obvious from the following quotation from the work of the most eminent neurologist of his day in Germany, Leyden. (Klinik der Rückenmarks-Krankheiten, Vol. I., p. 347). He says: "Doch haben sich schliesslich die Chirurgen von dieser höchst undankbaren Operation abgewendet und sie ist, soviel mir bekannt, in den letzten Jahren nur von den kühnen and operationslustigen Amerikanern gemacht. (Still surgeons have finally abandoned this supremely thankless operation and—so far as I know—it is undertaken in recent years only by the enterprising and operatively-inclined Americans.") We have turned the expression "kühnen und operationslustigen" as mildly as possible; it is capable of an infinitely more ironical rendering. We cannot, however, refrain from emphasizing the distinction which the author makes, either consciously or unconsciously, between surgeons and Americans. The biting sarcasm of this utterance should have been sufficient in itself to thrust the operation at once into innocuous desuetude in this country. But it was not, and the "operationslustigen" have continued, with a persistency which baffles comprehension, to contribute grewsome data and new-old ideas concerning a surgical procedure which should have passed into the darkest oblivion many decades back.

He would indeed be a "foolish person" and "a blockhead" who would attempt to deny that enormous advances have been made both in surgery and in neurology since the days of Cooper and Bell, and even since Leyden's time, but equally unduly confident is he who thinks that such advances have brought us any nearer to the solution of the problem under consideration. Notwithstanding all this we feel sure that there are those who will continue to look forward with the utmost confidence and hope for brilliant results from laminectomy in spinal fractures. For the benefit of such we cannot do better than to quote the sententious utterance of a brilliant and witty French neurologist (E. Brissaud, Leçons sur les Maladies Nerveuses, Paris, 1895) upon this point: "I remain convinced that the surgery of the spinal cord is full of promises, just as hell is paved with good intentions."

ECHOES AND NEWS.

NEW YORK.

No Plague Yet in New York.—The "City of Rome" and the Allan Line steamer "State of Nebraska," both from Glasgow, show not the slightest trace of any bubonic plague.

Illegal Practicing.—An agent of the County Medican Society charged Louis Capobianca of No. 118 Forsyth Street, in the Essex Market Court with practising medicine without being registered. The defendant asserted that he received his diploma in Italy, and did not know that he would have to register in this country. He was held for trial.

Dr. Winters Injured.—Dr. Joseph E. Winters, in company with his daughter, were thrown from their carriage August 31st near Stockbridge. Miss Winters escaped with only slight bruises, but Dr. Winters' arm was broken in three places. Dr. Winters was taken to Council Grove, where he is staying, and Dr. McBurney was called to set his broken arm.

Dr. Williams Sandbagged. — Dr. Hamilton Williams, the Coroners' physician, was recently attacked by ruffians and seriously injured.

Yellow Fever in New York.—Ignacio Garcia, a steerage passenger on the Spanish steamer "Leon XIII.," which arrived September 2d, from Havana, was removed to-day to Swinburne Island for treatment and observation. Dr. Doty said Garcia showed symptoms indicating yellow fever. The steamer and her passengers were held at Quarantine for disinfection and to serve out the balance of the quarantine period of five days.

Bequest to Rochester Hospital.—The Rochester City Hospital stands a chance of receiving a bequest of $50,000 from the will of Judge Francis O. Mason of Geneva. By the terms of the will the sum of $50,000 is left to the Geneva Hospital under the express condition that the hospital shall not have an officer known as a chaplain or have any person in its service at any time any part of whose duties it shall be to perform such services as are usually performed by a chaplain. The will provides that in case such request is not complied with the bequest shall revert to the estate of the testator and then be given to the Rochester City Hospital. Not more than $10,000 of the sum is to be expended for buildings.

Novel Treatment for Hay-Fever.—An artist of this city spent an hour or so in a cold storage warehouse recently in order to obtain relief from a persistent attack of hay-fever. On coming out he found that his cheeks were frostbitten.

Stramonium Poisoning. — Poisoning from Jamestown weed, Datura Stramonium, seems to have its quota every fall. Two cases are reported this week from Brooklyn. George Lenz, four years old, who lived with his parents at No. 725 Douglass Street, died, and Joseph Johnson, of the same age, and living at the same address, is on the point of death. The little fellows went lately into the vacant lots on Eastern Parkway and are thought to have eaten the thorn apple."

Randall's Island Fire.—Painters working on the roof of the School for the Feeble-Minded on Randall's Island, Wednesday, dropped a live coal on the roof. When they stopped work at 5 o'clock the coal was smouldering, and ten minutes later the roof was on fire. The blaze was quickly discovered, and the island fire department soon had it extinguished. The damage was slight.

PHILADELPHIA.

Thief Caught in Hospital.—A discharged employee of the Pennsylvania Hospital recently climbed over the wall and was discovered by one of the resident physicians after he had stolen a watch and several pins. He confessed and admitted that he meant to steal.

Decision Against Compulsory Vaccination.—The law requiring vaccination of school children was upheld by a recent court opinion in this city. In Bradford County it has been decided that the law is not mandatory but optional. The son of a Christian Scientist was refused admission to a school because of non-vaccination. The school board then obtained a verdict for two dollars from the father, the penalty of non-attendance. A higher court reversed the decision as above stated.

Woman's Medical College.—The vacancy in the chair of Professor of the Principles and Practice of Surgery has been filled by the appointment of Dr. W. L. Rodman. Dr. W. V. Laws has been chosen Professor of Operative and Clinical Surgery. During the month of August 362 new patients were treated at the hospital.

Public Baths and Contagious Diseases.—The epidemic of catarrhal conjunctivitis in the city was believed to have been traced to the public baths by two hospitals, the Board of Health being notified to that effect. A medical inspection was ordered and the 9 baths found to be in a satisfactory condition as to disinfection and precautions taken against contagious diseases.

New Children's Hospital.—Germantown dedicated a new Children's Hospital September 3d. The building accommodates 25 patients, but this capacity will soon be doubled. The hospital is the outcome of the suggestion of a six-year-old girl who, a few days before her death, asked that seventy-one cents she had saved be used to start a hospital for children.

CHICAGO.

Fasting by Divine Command.—"Dr." Henry R. Wallace Andrews, a minister and veterinary surgeon, broke a fast of forty days, during which he ate no solid food of any kind, at the County Jail to-day. The meal after his long period of self-denial was composed of a slice of watermelon and a few ounces of sponge cake. He fasted in accord with a divine command.

Obituary.—Dr. Ernst Schmidt, of 424 North State Street, died at his home August 26th. He was for more than forty years one of the foremost physicians of the city, having been at the head of the consulting staff of the Alexian Brothers' Hospital for several years and having acted in the same capacity for the Michael Reese Hospital, the individual supervision of which had been intrusted to him by the founder. Dr.

Schmidt was born March 2, 1830, in the village of Ebern, Bavaria.

Discuss Lymph Cure.—Physicians from all parts of the country, members of the American Animal Therapy Association, the society organized in New York in September last by Dr. Joseph R. Hawley of this city, met here August 29th and 30th, to discuss primarily the latest developments in the Roberts-Hawley goat-lymph compound and thyroid extract, and incidentally all forms of animal lymph. The cure of septic diseases of a chronic nature by the use of lymph made from the lymphatic glands of goats is at present attracting the attention of the entire medical world, by reason of the success attained. Particularly good results have been obtained in cases of local paralysis, locomotor ataxia, certain forms of insanity and premature decay and old age.

Trinity Diet-Kitchen for Infants.—Dr. George T. Palmer, medical director of the Trinity Diet-Kitchen for Infants, has just issued a report, showing the work of that institution during the last two months. He reports almost 700 babies cared for and only one death. The low death-rate is attributed by Dr. Palmer to the high grade of milk and foods given out, to the purity of the spring-water supplied, and to the ice that has been given to all to preserve the food.

The Norwegian Hospital.—On August 22d a lawn-party and musical and literary program were given for the benefit of the Norwegian (Tabitha) Hospital.

State Board on Lodging-Houses.—The Committee of the State Board and its Chicago inspector will ask the Board to draft a law for governing the lodging-houses more like the law now in operation in New York City. This law will include more rigid sanitary regulations, which, if enacted and enforced, should take away Chicago's reproach in this regard.

GENERAL.

Plague in Glasgow.—Present reports indicate 13 doubtful cases in the hospital and 103 suspicious persons under observation.

Yellow Fever in Senegal.—The mortality has been excessive. Fifteen per cent. of the population has been destroyed. One per cent. of the population are dying every day. The sick live only three to four days. Of those affected the mortality is eighty-six per cent. The physicians are suffering as much as the rest of the population. Negro priests, who are immune, are alone left to give the last religious rites.

Obituary.—First Lieut. Easton Burchard, Assistant Surgeon, Fortieth Infantry, died of dysentery contracted in the line of duty, on September 2d, on the transport "Grant." He was born at Bonnot's Mill, Mo., on March 29, 1865. He entered the service as Assistant Surgeon of the Fifth Missouri Volunteers on May 4, 1898, and was appointed First Lieutenant and Assistant Surgeon in the Fortieth Infantry on August 17, 1899.

A $10,000 Fee.—Arthur Goebel, brother of the dead Governor and his devisee under the will, has placed a claim against the estate of Gov. Goebel for $10,000 for Dr. McCormack's services. Gov. Goebel and Dr. McCormack had long been close friends and when Goebel was shot Dr. McCormack, who happened to be in Frankfort at the time, was one of the first physicians to come to his assistance. The wound was mortal, but knowing that if life could be prolonged a few days the Legislature would decide the contest, and that in the state of feeling resulting from the assassination Goebel would probably be declared Governor, Dr. McCormack took every step known to science to maintain life. Dr. McCormack refused to render any account for his services on the ground of personal friendship.

Kafir Cure for Dysentery.—It is reported that several of the army surgeons have tried the Kafir cure for dysentery with marked success in some very bad cases. It consists of a decoction of the root of the pelargonium or geranium. There are upward of 150 different kinds of wild geranium in South Africa, and each seems equally efficacious in cutting short an attack of dysentery. The Kafirs and Zulus simply chew the geranium root, but a more elegant preparation is made by boiling the root in milk. One or two tablespoonfuls are given every two hours till all symptoms of dysentery have disappeared. It would be desirable to obtain the name of the species. Our native geraniums, while having a mild astringent action, are not very efficacious in dysentery.

Cholera Spreading in India.—The Committee of One Hundred on India Famine Relief received the following cablegram September 4th, from William T. Fee, United States Consul at Bombay, Chairman of the Americo-Indian Famine Relief Committee: "In spite of previous rainfalls the situation is again alarming. Crops are beginning to wither. Great anxiety is felt lest they be destroyed. Starvation still threatens. Money is needed for buying food, as well as clothing. The ravages of cholera are increasing. Let America maintain her splendid benevolence. The need is undiminished." The Committee acknowledged the receipt yesterday of additional subscriptions amounting to $1,071.05, which makes the total of the fund to date $227,290.88.

To Colonize Vegetarians.—The Rev. H. S. Clubb of Philadelphia, President of the Vegetarian Society of America, is at Chattanooga, Tenn., in the interests of this society. The members are scattered all over the United States, and

during the last four years, so President Clubb states, there has been a growing spirit among the greater part of its members to separate themselves more distinctly from the rest of society. It is with this spirit that his journey has been made to the South. He is now in search of a suitable place for colonization. What he wants is a place where all kinds of fruits and vegetables can be grown on an extensive scale. This being found the scheme is to colonize the vegetarians and to engage in extensive fruit-farming for the Northern markets. Along with this the industry of making and selling peanut butter will be pushed.

Consanguineous Marriages and Consumption.—Dr. C. A. Davies of the Isle of Man in a recent communication to the British Medical Association said: Consanguinity in marriage among the Manx people had led to much illness in the offspring. There has been little crossing of races among them since the twelfth century, and a custom exists on the island to-day of discouraging marriages between persons living in different parishes. Hence there exists all over the island a condition of close "inbreeding." As a consequence the general death-rate from consumption is 25.70 per 10,000, double that of England and Wales. In Lonan, an isolated part, where all of the inhabitants of the parish have only three or four surnames, the rate is 41.79 per 10,000, while in Peel, where many more strangers come, it is only 15.19.

Statistical Study.—The members of an International Commission, with delegates from every European country and America, which meet at the Paris School of Medicine this past week, have decided to recommend to their respective Governments an international system of nomenclature in classifying the causes of deaths, for the purpose of rendering comparison possible between the death statistics of the civilized countries. The system recommended is that of Prof. Bertillon, whose anthropometrical method for the identification of criminals is in use by the police of the civilized world, the chief reason assigned for this choice being that the French classification is already in use in North and South America, and in several European countries. The recommendation, if adopted, will take effect January 1, 1901. There was only one dissentient to the recommendation, the delegate from Germany.

Typhoid in Newark.—The local board of health in tracing the many cases of typhoid fever recently reported has found that a large percentage of the victims are girls employed in the Clark thread mills, in this city and Kearny. Investigation showed that these girls have been drinking considerable water taken from driven wells in the mill yards. When Bacteriologist Connolly examined the water he found that, while that taken from the well at the mill on the west side of the Passaic River was fairly good, that taken from the wells in Kearny, on the east bank of the Passaic, was badly infected.

Decreasing Birth-Rate in Europe.—New statistics demonstrate the fact that in all the countries of Europe, with the exception of Russia, the percentage of increase by births has been diminishing since 1891, the average decline being three per cent. The greatest difference is shown by England, where births have receded from 34 per cent. to 29.1 per cent., and the smallest by Norway, namely, 0.1 per cent. From 1871 to 1875 the increase by birth in Germany was 39.9 per cent., but in 1891-95 this had sunk to 36.3 per cent., and in the year 1897 it went down to 36 per cent. The general average from 1881 to 1885 was 36.8 per cent., but is now 36 per cent. More noteworthy is the decrease in Austria where in the course of twenty-five years it has dropped from 39.5 per cent. to 37.4. In Belgium the percentage in 1871 was still 32.1, but in 1897 only 29; and in France the shrinkage in the same period was from 25.5 to 22.4. Next to Norway the most favorable data are reported from Switzerland.

Typhoid in Paris.—The official medical bulletin this past week reveals a disquieting sanitary situation in Paris. Statistics show that typhoid fever prevails in an almost epidemic form. There were recorded from the beginning of the year to August 13th 3,148 cases, of which 568 resulted fatally. This is a considerable increase over the records of previous years. Paris is never free from this disease, but until 1898 the number of cases for the corresponding period did not exceed 700. Moreover, the figures for the last few weeks of the present year show a perceptible increase over those of the earlier period. The prevalence and spread of typhoid are due entirely to bad water. One of the sources from which Paris is furnished is known to be infected with the typhoid bacillus, though the water from all the others is perfectly pure. The authorities, however, declare that they are compelled to utilize the contaminated source because the others are inadequate.

More Surgeons Needed in Philippines.—Many posts in that tropical climate are now without doctors. The number of military stations has been increased from 125 to 375 since last January. Although the sick report is phenomenally small, being less than 9 per cent. of the effective force, the large number of stations occupied and the increased amount of executive and administrative work that must be done in addition to the hospitals require at least one doctor for every post of any appreciable size in addition to those required for the administration personnel. At present there are but 366 medical officers for the entire work, including those with the "Relief" and those on duty in China. The result is that there is a large number of posts without any medical attendance except such as is furnished by members of the hospital corps, while a con-

siderable number of stations have no medical attendance of any kind.

Poisoned by Eating Crabs.—Five persons were poisoned in Peekskill, N. Y., Wednesday, 5th, by eating crabs. They were Mr. and Mrs. Edward J. Cole of No. 113 Union Avenue and their three guests. Mr. and Mrs. Cole and a Mr. Tate were unconscious all night, and were still very ill this morning.

Elmira Reformatory Appointment.—Announcement was made September 5th by the State Civil Service Commission that William W. Simcoe of Elmira had been appointed from the civil service eligible lists as keeper and captain at the Elmira Reformatory, at an annual salary of $3500 and board allowance.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, August 25, 1900.

ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION — ADDRESS ON OBSTETRICS — THE ABANDONMENT OF ROUTINE VAGINAL EXAMINATIONS THE GREATEST ADVANCE IN MIDWIFERY — OCULAR HEADACHES — PNEUMONIA IN CHILDREN—SOUTH AFRICAN WAR COMMISSION—THE DEADLY "RED TAPE" DODGED BY MR. RUDYARD KIPLING—ANNUAL CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH—ATTACK ON THE GOVERNMENT FOR THE FAILURE TO PROVIDE SANITARY OFFICERS IN THE SOUTH AFRICAN WAR—THE DANGERS OF RAILWAY CARRIAGES—TUBERCLE BACILLI IN THE DUST—WATERTIGHT SCHOOLS.

At the annual meeting of the British Medical Association Dr. William J. Smyly of Dublin delivered a highly important and practical address in obstetrics on "Maternal Mortality in Childbed." In a rapid historical survey of the subject he said that obstetricians in the past pursued their work in the face of failure little short of disastrous. In the first half of the present century the mortality, especially in hospitals, was probably greater than at any other period of the world's history. But toward the close of the seventies improvement suddenly occurred. In the Paris Maternity, for example, the mortality dropped in one year from 8 to 4 per cent., and in 1881 to 1 per cent., and has since improved. At the Rotunda Hospital during the period 1870-1876 1 in 45.5 women confined died; from 1890-1896, 1 in 181.7. In 1870 antiseptic principles were first applied to obstetrics, but the original system was too cumbrous for general practice. Then the spray was replaced by the douche and the vagina was douched before and after every labor; soon the uterus was included in the process. But accidents and even death, due to injection of air or antiseptic fluid into the veins, began to multiply and even an outbreak of puerperal fever was traced to the douche in the Berlin Charité Hospital. Leopold showed that by thorough disinfection of the external parts and avoidance of unnecessary examinations better results were obtainable than by prophylactic douching. The teaching of Semmelweis and Sir James Simpson that infection is chiefly carried by the hands of the attendants is now generally accepted. No handling, no sepsis, was not far from the truth. Leopold had shown that patients delivered without vaginal interference made better convalescence than under the most scrupulous antiseptic precautions. Both experience and bacteriology showed that absolutely aseptic hands could not be insured by any known process. The best practice was to substitute external examination for the vaginal, which Dr. Smyly claimed was the most important advance in modern midwifery. It is impossible to exaggerate the far-reaching importance of this statement which is a direct impeachment of the current practice in obstetrics all over the world, of a procedure which must be performed hundreds of thousands of times every day and to which every pregnant woman is exposed, and this by a past master of the Rotunda Hospital, speaking with all the authority of the great Dublin School of Obstetrics and at the most important medical congress in the British Empire. But Dr. Smyly went further and claimed not only that external examination was safer than vaginal, but also that it was more useful in diagnosis. At first he found it difficult to believe this, having for years practiced the ordinary method. By external examination he said the presentation and position of the fetus, whether it was living, dying or dead, may be ascertained and the course of the labor followed. Pelvic deformity was suggested by pendulous abdomen, abnormal mobility and obliquity of the uterus. In prolonged labors material danger was indicated by thickening of the upper and thinning of the lower uterine segments, elevation of the contraction ring and prominence of one or both round ligaments.

In the Section on Ophthalmology Mr. W. A. Brailey delivered an introductory address on "Ocular Headaches." Accommodative movements were bound up with the great majority of ocular headaches. It was a general law that the larger the ocular error the less the effect produced on the head, because a great defect of accommodative power led to its abandonment, the patient seeing as best he could without it. So also uncorrected presbyopia rarely caused headache except just at its commencement. Spasm and headache were more easily produced by moderate inequality of refraction, especially if astigmatic, and most of all by astigmatism with asymmetry of the axes. Errors of the external muscles produced headache but less often than errors of the accommodative muscles, although more often migraine, giddiness and general distress.

In the Section on Laryngology Dr. Scanes Spicer read an important paper on "Nasal Obstruction." An obstruction to the inspiratory current through the nose necessarily produced a fall of air tension and "dry cupping" of the mucous membrane of the nose and the accessory sinuses. This led the speaker to regard nasal stenosis as a preeminent factor in the etiology of catarrhal throat, nose and ear processes, which he found was borne out by clinical experience. It often happened that the most diverse cases of nasal obstruction were sent to him for operation for adenoids in which adenoid hypertrophy was absent or insignificant. In most cases of adenoids the condition was only a part, and often a small part, in the pathological condition of the so-called adenoid child, fractured and deflected nasal bones and cartilages, turbinal enlargements, hypertrophied tonsils, pushing up and growing up behind the soft palate, stunted nostrils and even vaulted palate were often more important features. The operation for adenoids or nasal obstruction was often incorrectly regarded as the termination of the case. It was only the first step. Developmental and respiratory exercises for the expansion of the chest and the restoration of respiratory vigor required attention.

Dr. Nestor Tirard (London) read a very able and lucid paper on "The Nature and Varieties of Pneumonia in Children." Bronchopneumonia had attracted more attention in children than lobar pneumonia. The distinction was not well defined between bronchopneumonia and vesicular bronchitis. Bronchopneumonia was common up to the age of three, after that many cases conformed to the type of true lobar pneumonia. The extent of lung engorgement was greater in children than in adults and this probably was responsible for the confusion with bronchopneumonia. As to abnormal forms the temperature might be extraordinarily high, say up to 106° F., either at the beginning or just before the crisis; there might be an unusually sharp crisis and a fall of 9°, 10° or 11.5° F.; and there might be wide oscillations of temperature, 5° of difference between the night and morning temperatures, which was apt to confuse diagnosis. The initial symptoms were occasionally like those of tuberculosis meningitis—headache, squint, retraction of the head and vomiting; or the sickness and delirium might suggest cerebral tumor. In spite of all the symptoms of pneumonia physical signs might be absent. In two cases quoted the dulness and tubular breathing appeared only at the crisis.

Very little fresh evidence of a usual character and calling for any remarks has been taken by the South African Hospital Commission since my last communication. The Commission has now sailed for South Africa, where they will pursue their inquiries. They will be away two or three months; on returning to England fresh evidence will be taken. The evidence of Mr. Rudyard Kipling shows the deadly influence of "red tape" in army organization, and his method of evading it is interesting. He visited the Cape-town hospitals and the doctors told him they had everything they wanted and the hospitals were by no means full. He then went to the nurse and asked her if she wanted anything, saying, "Because I can get things out of the 'Absent-Minded Beggar Fund.'" The reply was, 'We want pyjamas. Don't bring them to the Store Issue Department but to the back-door.' So I got 98 pairs of pyjamas, unloaded them at the back entrance and gave them quietly to the nurse." At another hospital he asked the same question and received the same answer—that it was no use taking things to the officials, but that if he brought pyjamas and pillow-slips to the back entrance they would be obliged, because these were wanted.

The Royal Institute of Public Health has held a very important annual Congress at Aberdeen attended by delegates representing the principal sanitary and municipal bodies throughout the United Kingdom. The President, Lord Aberdeen, said that sanitary legislation dated only from a hundred years ago when Factory Acts were passed for the protection of children, who were often herded together promiscuously within the actual factory building, and for restricting the age of employment to those above eight. Acts to prevent contamination of water supply with sewage followed. In 1846 powers were given to a central authority—the Privy Council—to issue orders for preventing the spread of disease. In 1889 the Infectious Disease Notification Act was passed. The work of the Congress was so extensive that it had to be taken in different sections—Bacteriology and Comparative Pathology, Chemistry and Meteorology, Architecture and Engineering, Municipal and Parliamentary Hygiene, Preventive Medicine and Vital Statistics. In the last section Prof. Simpson of King's College, London, made a violent attack on the Government in connection with the South African scandal. After the experience of the Crimean war, he said, it was discouraging to find that 1 in 20 of the soldiers suffered from a more or less preventible disease, typhoid fever. There was a serious defect in the sanitary administration in South Africa. In the Afghan and Egyptian campaigns sanitary officers were appointed. In the latter dead camels and other transport animals were burned and there was very little typhoid and practically no ophthalmia. But in the present war no sanitary officers had been appointed, although Sir Walter Foster had pointed out the necessity. Never before had greater attention been paid to the sick and wounded, but the same solicitude had not been paid to prevention of disease. He attached no blame to the Army Medical Service, which could not perform impossibilities. They were working under pressure, one was required to do the work of two. A lesson might be taken from the Germans, their force going to China was accompanied by a special sanitary service. Since

1892 no sanitary officer had been appointed at Aldershot. Sanitary work was now attended to by quartermasters.

Prof. Hamilton of Aberdeen read a paper on "The Danger of Spreading Disease by Vehicles of Transport." The danger of spreading disease by dust impurities was not properly grasped. He confessed that he had a feeling of horror on entering a railway carriage, school or place of public resort. He had made a number of experiments with the dust taken from the floors of railway carriages. Two out of twelve samples were contaminated by the tubercle bacillus. The so-called cleaning of carriages consisted merely in stirring up dust. To guard against the spread of disease the flooring should be movable and the cushions detachable, and the carriages should be periodically disinfected. People will spit on the floor in spite of everything done to prevent it. The sputum might contain the organisms of tuberculosis, pneumonia, diphtheria or influenza, which after drying became disseminated in the dust. At present railway companies studiously washed the outside of carriages, washing of the inside has yet to come. He thought that schools ought to be watertight compartments, the walls and ceilings covered with watertight cement, and the roof and flooring similarly waterproof, and that every schoolroom ought to be hosed or otherwise cleansed once a week.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

A CASE OF POLYNEURITIS—LINGUAL GANGRENE—THE FACIAL NERVE AND WEEPING—SPINAL-CORD TUMOR—MARRIAGE AMONG THE TUBERCULOUS — DIGESTIVE LEUCOCYTOSIS — PRODUCTION OF MILK—RUPTURE OF THE UTERUS—HEMOSTASIS AND FAT EMBOLISM — GUNSHOT WOUND OF THE HEAD WITHOUT SYMPTOMS—DOUBLE ANKYLOSIS OF THE HIP—TUBERCULOSIS OF THE STERNUM—FOREIGN BODY IN THE ESOPHAGUS—IN THE RECTUM.

Ewald, at the Gesellschaft der Charité-Aerzte in Berlin, June 28, presented a patient with malarial polyneuritis. He had moderate paralysis of both lower extremities, especially of the extension of the great toes, together with a psychosis manifested by failure to articulate and remember. After this case he discussed another which had a most obstinate fever of the tertiary type, which resisted all known methods of treatment.

Werner, at the Aerztlicher Verein in Hamburg, June 26th, exhibited a case of traumatic lingual gangrene. This patient, a prostitute, had probably acquired syphilis, which never within her observation or memory had given florid signs and which, therefore, had never received any systematic medical attention. In consequence of this infection a frank attack of tabes dorsalis began about a year previously and latterly had gone on to mental aberration, showing foolishness, weird imagination, utter falseness and various voice changes. The last development had been gangrene of the tongue, due to hysterical self-damaging tendencies. Frequent and persistent biting had been manifest. The area affected was the anterior third. The tongue had separated along a line of imprint made by the teeth and the gangrenous part had come away in masses, leaving a clean stump.

Sanger showed a sixteen-year-old boy, who by a fall from a wagon had received a fracture of the base of the skull on the left side. It was followed by paralysis of the auditory and of the facial nerves, the latter in all its branches; later there was disturbance of taste in the anterior third of the left lateral half of the tongue and some weakness at the base of the tongue on the same side. But tears flowed equally well from each eye. The point of the case seems to be that the tear function is under control of the trigeminus, facial and sympathetic nerves and that the supposition that the facial alone supplies it is probably not correct.

Bottiger reported a successful case of removal of a tumor of the spinal cord. The patient was sixty-five years old and had complained of pain, increasing in severity and distribution, in the left leg and of paresis with pain in the right lower extremity with a zone of analgesia about the hip. At the operation the arches of the fifth to the tenth dorsal vertebræ were removed and the dura exposed. An extradural psammoma was found. The wound healed well and all the prospects were for a good recovery.

Gerhardt at the Verein für innere Medicin in Berlin, July 2d, discussed the propriety of marriage of the tuberculous. The question had come up late during the last Tuberculosis Congress with insufficient time for its ripe consideration. Literature is full of papers on this subject, aiming to give opinions and guidance to the family practitioner in advising about this all important question. It appears that the consensus of opinion makes marriage worse for the woman than for the man, because she is oftener infected through sexual intercourse. The reason for this is that in a large proportion of tuberculous males the sexual apparatus is involved and in about 5 per cent. of all cases examined the same condition is true. Weber examined 68 persons; of 39 healthy males probably 1 had been infected by his wife; of 29 females 18 traced their infection to intercourse and half of these in wedlock. One tuberculous man lost four, and a second three wives by his own infection, all seven dying eighteen months after marriage. Virchow long has taught that after marriage a previously existing tuberculosis is apt to get worse, and that males of tuberculous families are apt to go to pieces soon after marriage. The drain of pregnancy and lactation is much increased by the presence of tuberculosis and for

the child this too adds a very great danger. Practically a good rule would be for a victim to abstain from marriage at least one year after apparent cure. In this connection Virchow relates the case of a young physician who was considered cured of the disease, had remained some time in a trying climate and finally married. His tuberculosis returned soon after and resulted fatally. Another practically important and difficult question deals with the interference with pregnancy owing to tuberculosis. If the disease is steadily progressing, the author thought this should be done. In his experience digitalis in slowly increasing doses is a very good treatment for the frequent abnormal sexual appetite so common in tubercular males, and often satiated by pollution. Sometimes gonorrhea or syphilis may be superimposed upon the tuberculosis. Appropriate treatment will eliminate either from the diagnostic or therapeutic aspect of the case.

FURBRINGER criticised the view of the speaker as too discouraging, and added that he had seen tuberculous men positively improve under the quiet of married life, in contrast with excesses of unmarried life.

JAPHA read the report of his experiments on himself as to digestion leucocytosis. He found that a greater increase in the white cells occurs after dinner than after the other meals, for instance breakfast, although of food rich or poor in albumen. He also determined that when fasting after midday a leucocytosis occurs. This he deems due to the daily influence of food ingestion. The increase is chiefly in the polynuclear cells. The supposition formerly held that these cells proceed from the intestinal wall is to be abandoned because they are of the mononuclear variety. Here also falls to the ground the theory that they originate directly out of the absorbed peptone in the intestinal wall. In his opinion they come directly from the bone marrow and their appearance is merely the expression of digestive activity. Apparently the diagnostic value of this condition is not great and depends upon whether or not this variation can be further established.

WASSERMANN, quoting the results of experiments by Bordet, said that serum of one kind of animal injected into another bestows upon the latter blood its characteristics. Again, milk injected into the circulation of an animal will determine upon the milk of that animal many of its own features. It is a well-known fact that the albumin in the milk of many animals varies widely from species to species. If cooked milk is injected the experiment fails utterly. From these premises it seems possible in this way to practically duplicate human milk.

FUNKE at the Unterelsässischer Aerzteverein, June 23d, read the history of a recovery from laparotomy for rupture of the uterus, as follows Primipara, aged twenty-one years, at term; at the beginning of labor the head of the living child impacted in the pelvic canal high up; finally still birth by asphyxia; apparently good condition of the mother; no placenta delivered; examination showed rupture of the uterus and induced syncope and collapse; laparotomy at once; placenta removed from the abdominal cavity; toilet of the peritoneum; suture of the rupture which extended laterally from broad to broad ligament in front; drainage through the cervix first provided for; very careful suture of the peritoneal coat; closure of the abdomen. The speaker considered the careful suture of the peritoneum the most important detail and the above treatment the best.

RECKLINGHAUSEN reviewed the literature on traumatic hemastasis and fat embolism with the reports of Perthes, Willers, Huete, Vogt and Braun, of the universal hemorrhagic infiltration of the head, neck and shoulders without any deep or external hemorrhage of importance after tremendous pressure about the thorax and abdomen. He then presented the organs of a fifteen-year-old boy crushed in a wheel about the upper part of the chest. The eighth and eleventh ribs were bowed inward; the eighth and ninth were broken at their angles; the last two thoracic and the first three lumbar vertebral arches were broken and the peritoneum torn off; hemorrhage into the fatty tissue of the spinal canal; protruding eyeballs; thick ecchymosis and hemorrhagic infiltration of the skin of the head, neck and shoulders, into the mucosa of the throat and temporal muscle tissues, subpleural and pulmonary ecchymosis and pulmonary fatty embolism apparently from the subcutaneous regions; no cutaneous external hemorrhage, except through abrasions. The conditions seemed limited to the veins and especially to those which have no valves. The cause of these hemorrhages seems, first, the sudden pressure arrest of the blood-current with damming back of the blood, and, second, actual bursting of the small veins not provided with valves.

NAUNYN in the discussion said the infrequency of valves anywhere in the veins favored such conditions. Even the vena cava has no valves until it enters into the heart.

BRAUN contributed at the Altonaer Aerztlicher Verein, April 25th, a case of gunshot wound of the left temporal bone without cerebral symptoms, either primary or secondary. Upon opening the scalp-wound the bone was found shattered over an area the size of a dollar and deeply depressed. The fragments were all removed. Those of the inner table were more numerous and smaller than those of the outer and crowded under the firm bone margins. The bullet was found flattened out between the dura and the cranium. The membranes were intact and the brain pulsated normally. No complications occurred. He also exhibited the brain and left petrosal bone of a twenty-five-year-old man operated on for abcess of the cerebellum. The origin of the disease

was evidently middle-ear lesion and the diagnosis of meningitis was excluded, because the pulse showed pressure and the temperature was subnormal. Somnolence came on and von Bergmann laid the temporal bone bare and entered the brain in the left temporal lobe along the lowest temporal convolution. Pus was not found. The bone-wound was then extended backward to the angle between the sigmoid and transverse sinus. A small abcess cavity situated far in near the bone was evacuated and drained. At the autopsy meningitis was not found; the abcess was in the left lobe of the cerebellum in the angle between the tentorium and the petrosal bone. The middle ear had been destroyed and the facial nerve and canalis Fallopii directly infected. At the meeting of May 16th he introduced two women both operated on four weeks previously on the same day for ruptured ectopic gestation. Internal hemorrhage threatened life. At the laparotomies the arteries were tied off and bleeding ceased; the sacs were then ablated and the clots and blood washed out of the abdomen. Drainage was put in and the wounds closed. All went well until after a few days fecal vomiting appeared, but this was of short duration and yielded to lavage. Full prompt recovery then resulted.

Krause exhibited a fourteen-year-old girl with double hip ankylosis secondary to purulent arthritis. Through a Langenbeck incision the left femur was severed just through the great trochanter, the end of the distal piece carefully rounded and the proximal fixed portion hollowed out for a false joint. It is hoped that early passive motion will facilitate such joint-formation. The primary dressing was plaster-of-Paris and the position midway between adduction and abduction. He also brought forward a forty-one-year-old woman who had suffered removal of the manubrium sterni and the inner halves of the clavicles for tuberculosis. Complete cure without sacrifice of function of the upper extremity followed.

Wilms at the Medical Society, Leipzig, May 8th, showed a two-and-a-half-year-old child who had undergone external esophagotomy for impacted foreign body. A coin had been swallowed long previously, was easily palpable externally, so fixed as to render extraction through the mouth impossible, and through the wound only after much rather vigorous manipulation. The wound was packed, the esophagus not sewn. Healing occurred down to a very small fistula in three weeks, which itself closed in a few days. Feeding was carried on by stomach-tube carefully passed through the nose. In connection with the above he recalled a case of instructive and curious force illustrating the tolerance of the body for foreign bodies. A laborer still pursuing his avocation presented himself at the clinic August 20, 1899, complaining of rectal obstruction. Examination showed a knife-blade whose handle was palpable in the sigmoid between the navel and the symphysis. He had passed the knife into his rectum with suicidal intent on July 20, 1899. The instrument had bored quite a cavity in the sacrum, and was fixed therein. Easy removal and prompt recovery followed.

SOCIETY PROCEEDINGS.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

Held at Paris, August 2-9, 1900.

(Continued from page 355.)

Section on Pharmacology, Materia Medica and Therapeutics.

Digitalis: Its Pharmacology.—The physiological and therapeutical uses of digitalis were discussed by Dr. Lauder Brunton. He first gave a historical résumé of the drug and brought out the apparent differences in its action on the heart of lower animals and of mammals. In the frog the cardiac beats are lessened in number and the contractions are more complete. The heart expands more in diastole and contracts more in systole. In mammals also the cardiac pulsations become slower and more powerful, but in them this slowing of the heart's action is not due alone to its action on the muscular tissue of the heart, as it is with the frog, but is due to stimulation of the cardio-inhibitory center in the medulla. There is a general consensus of opinion regarding the power of digitalis to increase the strength of the cardiac contractions; but this is not the case in regard to its action on the blood-vessels, for some maintain that its action in contracting the blood-vessels is as marked and is an important factor in the action of digitalis, while others maintain that the contraction of the vessels which it produces, if any such contraction exist at all, is slight, transient, and unimportant. Dr. Brunton's view is that contraction of the vessels produced by digitalis in mammals is very well marked, and depends, just as in the case of the heart, partly upon a peripheral and partly upon a central action of the drug. Digitalis has a local action in the muscular walls of the arterioles, causing them to contract, and it also stimulates the vasomotor center in the medulla oblongata. By its combined action of contracting the arterioles and of increasing the power of the heart it raises blood pressure.

Digitalis: Kidney Action.—The diuresis which digitalis produces is probably due to increased pressure within the glomeruli of the kidneys. Digitalis causes contraction of the vessels of the kidney as well as other parts of the body. At one stage of the action of digitalis, when the blood-pressure is very much raised, the secretion of urine may be as completely arrested as if the renal artery were tied. As the pressure begins to fall the secretion of urine becomes greatly increased, but the urine generally shows a trace of albumin exactly in the same way as if the renal

artery were first tied and then the ligature removed. If the pressure in the vessels is naturally high, and the secretion of urine abundant, it could hardly be expected that it would be much increased by the action of digitalis; but if the blood pressure is low, as in people with lax arteries, or where the arterial system is comparatively empty in consequence of mitral regurgitation, the diuretic effect of digitalis is naturally more pronounced.

Digitalis: Its Chemical Composition.—The chemical composition of digitalis is complex, and a good deal of the discordant results obtained by different observers are not only due to differences in the animals experimented upon, but to differences in the physiological action of the preparations employed, even when these preparations have borne the same name. According to Schmiedeberg, the chief components of digitalis are digitoxin, digitalin, digitalein, digitonin, and digitin. Digitin has little or no physiological action, and digitonin but little, so at present both may be dismissed from consideration. The crystallized digitalin of Nativelle consists chiefly of digitoxin, the digitalin of Homolle and Quevenne consists chiefly of digitalin and German digitalin consists chiefly of digitalein and digitonin. The action of these drugs appears to be nearly alike in kind but different in degree, digitoxin being by far the strongest. Nativelle's digitalin, which consists chiefly of digitoxin, was found by Widal to be eight or ten times stronger than amorphous digitalin. Nativelle's digitalin in daily doses of 1 to 2 milligrammes slows the pulse, while 3 to 10 milligrammes of Homolle's digitalin are required for this purpose. The German digitalein may be given in doses three times as great as Homolle's digitalin, or ten times as great as that of Nativelle's.

Digitalis: Therapy.—The therapeutic actions of digitalis or of its active principles are that they (1) regulate the heart's action; (2) assist the falling circulation; and (3) act as diuretics. In cases of palpitation and functional irregularities of rhythm without organic disease, small doses of digitalis, such as five to ten minims of tincture, are sometimes very useful. The good effect of digitalis is well marked in cases of palpitation which have come on from physical strain, as by lifting heavy weights, or from anxiety and worry. In cases where the palpitation arises reflexly from irritation of the stomach better results are obtained by bismuth and rhubarb than by any cardiac tonics, although the addition of nux vomica to these two drugs assists their action. In cases of aortic regurgitation where compensation is complete, digitalis is quite unnecessary. In aortic regurgitation with full compensation digitalis may possibly be harmful, as the risk in such cases arises from fatal syncope. For the blood in the arterial system being in aortic regurgitation emptied backward into the heart as well as forward through the arterioles into the veins, the blood-pressure tends to become very low during the cardiac diastole. Should this diastole be prolonged the pressure may sink much below the normal, and the risk of syncope is increased. But digitalis is of the utmost service when the mitral valves become incompetent, either in consequence of damage to the valves themselves or in consequence of dilatation of the cardiac orifices from weakness after infective diseases, such as influenza, or from failure of the hypertrophy consequent upon aortic regurgitation or renal disease. To get the best results in severe cases the use of the drug should be associated with rest in bed and massage. The absence of exertion tends to lower the pressure which the heart has to overcome in systole, and lessens the rapidity of the cardiac beats. The slowness of the pulsation produced by rest is still further increased by digitalis. It is during diastole that the heart has time to recuperate. It is what might be termed the heart's period of rest, sleep, and repair, and by prolonging it one tends to restore the heart to its normal condition. In fact the empty arteries tend to fill, the distended veins tend to become empty, and the venous congestion which led to enlargement of the liver, indigestion, flatulence, edema of the legs, and albuminuria, tends to disappear. The legs become normal in size, the enlarged liver becomes smaller, the digestion improves, the urine becomes abundant and free from albumen. The pulmonary circulation also becomes freer, the shortness of breath and irritating cough become less and less and finally disappear. The dilated heart being able to contract more powerfully, the ventricular and auricular orifices become smaller, and the valves even though they may be damaged will tend to close the orifices more completely during systole and thus lessen regurgitation. In addition to this the increased force of the cardiac beats tends to oxidize the tissues more completely.

Massage with Digitalis.—By the use of massage in addition to digitalis a good deal of work may be taken off the heart because, instead of having to drive the blood right round from ventricle to auricle, it will only have to drive the blood to the periphery, the movements of the masseur returning a great deal of both blood and lymph from the periphery to the heart.

Dangers of Digitalis.—Dr. Brunton spoke of the dangers of digitalis in cases of fatty heart and very high tension. He said that it has been said with much truth that it is by no means easy to ascertain with certainty that the heart in any patient has undergone fatty degeneration; but when the heart beats are feeble and its sounds are weak, disproportionately to the size of the organ, it is well to be on guard against possible injury from digitalis. If digitalis causes contraction of the arteries as well as of the heart, and the heart has undergone fatty degeneration while the muscular fibers of the arterioles have not done so, the resistance to the cardiac contractions will be increased, and a heart which is already hardly able to carry on the circulation

may be still further hampered by the drug. In such cases, if it is desirable to stimulate the heart by digitalis, the resistance in the arterioles ought to be lessened by the simultaneous administration of nitrites, such as nitroglycerin, nitroerythrol, or ethyl nitrite. The same precaution should be adopted in cases where the arterial tension is high, and the heart is just beginning to fail; but in such cases the risk may arise from the already high tension being increased and leading to a rupture of a vessel in the brain should be remembered. In such cases it may be well to avoid digitalis altogether; but should it from any reason be thought advisable to use the drug, not only should nitrites be given at the same time, but great attention should be paid to the condition of the bowels and liver. There is still an enormous field for investigation in regard to the action of drugs in combination, and although it is not known why the administration of mercury and calomel along with digitalis should greatly increase the utility of the drug, there can be no doubt whatever that this is the case, and that when digitalis alone fails to produce the result desired, it will frequently act most efficiently if mercury be given with it.

Surgical Treatment of Anasarca.—Dr. Menko (Amsterdam) spoke of the difficulties in the medical treatment of anasarca. In those cases in which diuretic, purgative, and diaphoretic treatment has proven unavailing he advocated surgical procedures. That this method has not proven popular it is easy to conceive, since the initial cause of the dropsy is one not amenable, as a rule, to methods of removal. Two surgical procedures are advocated, incision and drainage. Menko employs incisions for those patients who are agitated or delirious, for those who are unable to remain quietly in bed because of orthopnea, also in cases of sclerosis of the skin, induced by persistent edema. Drainage is preferred in all other cases. Somewhat modified Curschmann's cannulas were employed. Several favorable results were reported.

Section on Bacteriology and Parasitic Diseases.

Toxins and Antitoxins.—Ehrlich of Berlin presented a lengthy discussion on this subject. Toxins, he said, were very unstable substances found in animal and vegetable secretions after a certain amount of chemical breakdown. At the present time no definite chemical definition could be given of this group, as a whole, although many isolated members were chemically analyzable. Many of the toxins are obtained in too minute quantities to permit of analyses and the precise structure of many is hard to obtain, because of the many closely allied bodies found with them. The main proof of a toxin was its biological action. This action being manifested by the physiological action and the bodily reaction, under poisoning, which often results in the formation of some antitoxin body. In order to more correctly define a toxin, notwithstanding the chemical difficulties, a special incubation period was noticeable, in which direction certain analogies exist with the snake poisons. Ehrlich does not believe in the production of antitoxins for certain definite compounds, many of the alkaloids, for instance. The averred results in antitoxin production by morphine, he believes to be erroneous. Toxins form certain specific combinations with protoplasm and thus act in a manner different from that of other poisons. The alkaloids are thought to bring about phenomena in living protoplasm, akin to what chemists term solid solution. In the toxin molecule Ehrlich describes a *haptophore* group, through the chemical behavior of which he attempts to describe its peculiar action. In order to do so satisfactorily he assumes also a *toxophore* group, which can be isolated under certain conditions in its action from the haptophore group. Thus one acts perhaps under the influence of cold and the other of heat. Certain time differences are also noted. Certain *receptors* or lateral binding chains of molecules are called in by Ehrlich to further elucidate some of the problems. These receptor groups exist naturally in some tissues and are absent in others and the phenomenon of natural immunity was perhaps to be explained by the absence of this group of receptors. Antitoxins are held to be these protoplasmic receptors and their peculiar property of neutralizing the action of the toxins is due to their power of fixing, and thus rendering chemically inert the haptophore groups in the toxins. Ehrlich believes that the diphtheria toxin, elaborated by Loeffler's bacillus, is made up of two distinct substances, a toxin and a toxon, both of which possessed a similar haptophore group and thus were acted upon and fixed by the antitoxin. Certain other bodies, designated by him as *toxoids*, are also present in diphtheria cultures. These are thought to be non-toxic modification of toxins, capable of fixing antitoxins, and it is by means of these that the phenomena of quantitative variations in toxic power are to be explained. Toxoids as well as toxins may be utilized in the production of antitoxins and for especially susceptible individuals modified antitoxins might be prepared from such toxoids.

Immunity.—Dr. Buchner of Munich had a much less fantastical series of hypotheses to explain the phenomena of "natural resistance," a term preferred by him to natural immunity. He reverted to his older theory of the alexins, which were believed to be secretions formed by living leucocytes. The phenomenon of phagocytosis was partly sufficient only to account for many of the resistance phenomena and in the destruction of bacteria it was not an indispensable factor. This seems to be proven by the alleged fact that bacteria have been destroyed in internal organs, in exudations, without the presence of leucocytes. Immunity was regarded by Buchner as threefold. Antitoxic, brought about by the previous use of certain specific substances, toxins or

modifications of the same which have altered their peculiar toxic properties; bactericide, in which the action of certain bacteria, living or dead, induce the diminished susceptibility and, themolytic, or a condition brought about by the use of definite erythrocytes.

Malarial Parasite.—Dr. Laveran described two varieties of the hematozoon of malaria, *hemammeba malariae,* designated as *parva* and *magna,* according to size. These two forms might be found in the same person in different attacks and are not to be thought of as distinct species, but purely as varieties of the same organism. Laveran inclines to the belief that the flagella of the malarial parasite are sexual in their function, being male elements. He also maintained that while *anopheles* was undoubtedly the host of the parasite and was perhaps the most frequent agent in the dissemination of the disease, nevertheless malaria could be contracted by other means than by the bite of this particular mosquito. His researches on artificial immunity had been, thus far, unfruitful.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held April 3, 1900.

Frederick Peterson, M.D., President.

Thyroidectomy for Graves' Disease.—Dr. B. Farquhar Curtis reported this case and presented the patient who was operated on in November, 1897. There had been symptoms for some time previously and the goiter was of moderate size. The eyes were quite prominent and the pulse ranged from 120 to 150. Primary union followed the operation, there was no interference with the general health, and she improved steadily from that time. The left half of the thyroid was removed. Less than two months after the operation she was able to resume her occupation of bookkeeper, and her pulse gradually became slower. Apparently the cure was permanent.

Resection of Sympathetic for Graves' Disease.—Dr. Curtis also reported this case and presented the patient, a woman of twenty-nine years. She had had three children, and the disease was worse during each pregnancy. The symptoms lasted about four years before operation and were quite marked during the last two years. In December, 1898, there was a moderate exophthalmos, a rather rapid pulse, and some nervousness. In May she developed a paralysis of the left vocal cord, and twelve days later Dr. Curtis operated on her at Bellevue Hospital, removing the cervical sympathetic on both sides, but leaving the goiter untouched. While in the hospital the pulse was at no time above 106. Since the operation the nervousness diminished, and the eyes improved decidedly. The first effect of the operation was a reduction of the size of the gland.

Dr. Theodore Janeway said that when she returned to him last January the thyroid was increased in size, the pulse about 90, aortic and systolic murmurs developed, and she suffered a good deal from headache. Examination of the urine was negative.

Dr. Curtis said that he had performed nine thyroidectomies for this disease, and in none had the operation itself been complicated in any way, not even by hemorrhage. Of the nine cases, six recovered and three died. The first of the fatal cases was that of a woman who was in fair condition at the time of operation, but became stupid immediately thereafter, and developed a temperature of 107° F. before death. This death seemed to be chargeable to thyroid-poisoning rather than to uremia. In the second fatal case the symptoms were quite severe and the exophthalmos was marked. She did not suffer much from shock, but the day following operation she became very restless and the temperature and pulse rose rapidly. She suddenly succumbed, apparently from heart failure. The third fatal case was that of a woman of twenty-three years, apparently in excellent condition, with a moderately large goiter and a good deal of nervousness. She stood the operation well, but thirty hours later developed a very rapid pulse and respiration, together with a high temperature and great nervous excitement. A little albumin was found in the urine. In all three cases there was nothing, from a surgical standpoint, to criticise; hence, he believed the fatal result might be attributed to thyroid-poisoning. He had never seen such symptoms in an ordinary case of thyroidectomy. It was worthy of note that in one of the cases, marked by a pulse varying from 120 to 150, the pulse dropped to 100 before the patient left the operating-table, and since then varied between 90 and 100.

Dr. Graeme M. Hammond said that the results obtained by Dr. Curtis seemed to point very strongly to the majority of these cases being the result of a hyperactivity of the thyroid gland. It was not improbable that some special nervous condition was the underlying cause of this hyperactivity of this gland. He thought one should hesitate before advising thyroidectomy in cases of exophthalmic goiter in view of a mortality of 33 1/3 per cent. It would be interesting to know the effect of the administration of thyroid extract in cases exhibiting these toxic symptoms after operation.

Dr. E. D. Fisher said that he had seen a patient in whom the cervical ganglia had been resected and her general condition had certainly improved. A number of these operations had been reported, and it seemed to be a justifiable procedure. Some operators reported the occurrence of considerable hemorrhage at the operation and explained it by the marked dilatation of the blood-vessels present, supposed to be a part of the effect of the cervical sympathetic. In some of the cases relief followed even removal of one ganglion. On the removal of each ganglion in the case just presented there was noted a very transient dilatation of the pupil on that side.

Dr. W. M. Leszynsky said that the prognosis of Basedow's disease always seemed to him to depend largely upon the financial ability of the patient. It was for this reason that patients of the poorer class found it desirable to submit to operation. He had tried repeatedly, and in vain, to secure the admission of such patients to our city hospitals for a prolonged course of treatment.

Dr. Fisher thought many of these cases did not respond to even the best methods of treatment, and under the most favorable conditions.

Dr. Leszynsky contended that the early resort to proper treatment, an essential feature of which was prolonged rest, would cure very many cases.

Dr. Peterson took the same view as the last speaker. Both operations described by Dr. Curtis seemed to him very serious ones to undertake until safer methods of treatment had been given a fair trial.

Dr. Curtis said in his cases the opinion had been expressed at the time that the poisonous symptoms were the result of the escape of too much thyroid secretion into the system. It was possible that earlier operation would eliminate this danger.

Word-Deafness and Naming Center. — Dr. Graeme M. Hammond, who read this paper, said that Broadbent first brought forward, as a theoretical proposition, this "naming center," but it had not been placed on a more tangible basis until a case had been carefully observed and reported by Mills. The speaker said he had suggested that the cells which were the most highly organized would be the ones which would naturally retain and register the names. If this were the case, the location of the centers in which the names were stored might differ materially in different individuals. Further study, however, led him to think that such a theory was not necessary to a proper understanding of the cases already reported by others, as well as by himself. Dr. Hammond then presented an illustrative case—that of a man who was injured in a fight on May 8, 1899. He was struck on the temple and was able to walk home, but a few hours later had a severe general convulsion and lost the power to name objects. He could talk voluntarily and could say most words except the names of objects and persons. He recognized familiar objects, as evidenced by gestures, but he could not give their names or repeat them after they had been told him. Dr. Seneca D. Powell operated upon the man and found a linear fracture of the temporal bone and a clot which completely covered the superior temporal convolution. At about the junction of the posterior-third with the middle-third was a hole about the diameter of an ordinary lead pencil and fully one inch in depth. He made an excellent recovery from the operation and soon regained the power of naming objects, but the word-deafness had never entirely disappeared. At the present time he found it difficult to pronounce words of three syllables or more.

Dr. Hammond also reported a case in which there was softening of the middle-third of the second temporal convolution. The patient entered the Charity Hospital on January 9, 1900. He was about forty years of age and had a fair education. He was comatose at the time of his admission, but soon recovered his mental condition for the most part. There was no motor weakness and disorders of sensibility were not noted. The special senses appeared to be unimpaired. He was almost completely word-deaf, and was also completely word-blind, and had absolute agraphia. He could not write from dictation or copy simple geometric figures. He was, however, by no means stupid. Had he lived a diagnosis of a lesion of the superior temporal convolution and of the angular gyrus would have been made, and yet, as shown by the autopsy, neither of these regions had been implicated at all. In the first case, loss of power to name objects did not depend primarily upon the lesion. In the second case, the lesion implicated was almost outside of the accepted region for the naming center. In Mills' case word-blindness had been associated with anomia and yet the lesion had been further from the higher visual center than in the second case just reported. The speaker thought the presence of word-blindness or word-deafness, either alone or in combination, only implies that a lesion in any part of the speech area may give rise to various forms of aphasia. It seemed probable that any lesion disturbing any part of the speech area might cause anomia, and hence it could be understood how two such widely-separated lesions as in Mills' case and in his own could produce like results.

Dr. E. D. Fisher suggested as a possible explanation that in the case just reported the lesion was more deeply seated than in Mills' case—not in the cortex proper, but in the fibers leading from it.

Dr. Joseph Fraenkel said that the patient presented seemed to understand the meaning of the words pronounced, the defect seeming to be rather motor than a pure word-deafness. It seemed to him, therefore, that the man had recovered from his aphasic disorder. Concerning the existence of a naming center, the speaker said that he agreed with Dr. Hammond that there was no distinct naming center. He had at present under observation a male syphilitic, about forty years of age, who had been recently exhibiting impaired mental faculties and a spastic paralysis of the right upper extremity. In addition, he was absolutely unable to name an object shown him, but he could define the use of the object. In this case he felt convinced that there was one sufficiently large lesion in the arm center to encroach slightly upon the speech center. A mild interference with the speech area would lead to marked disturbance of the higher and more complex functions associated with speech.

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ORIGINAL ARTICLES.

A SIMPLE AND EFFICIENT TREATMENT OF TALIPES CALCANEUS PARALYTICUS IN YOUNG CHILDREN.[1]

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FOR a number of years in my own hands the treatment of calcaneus in young children was unsatisfactory, and my experience with the various mechanical devices had failed to convince me that one could reasonably expect a cure. The difficulty lay in the construction of an apparatus that would keep the foot fully extended at all times, without making such apparatus too cumbersome. The ordinary "reverse catch," which we have all had so much to do with, so frequently got out of order that I rather despaired of securing continuous extension, because time and again this catch would get out of order, the foot-plate would break, or the shoe bend at the sole, and the patient would come in walking on the heel. Even in the hospital where I was enabled to keep the appliance in reasonably good repair, it was exceedingly difficult to maintain continuous extension of the foot.

In thinking over the explanations given for the production of deformity in a paralyzed limb, I was convinced that long-continued position contributed largely to the shortening of a tendon in a paralyzed muscle. For instance: The ham strings would shorten, and even the muscles themselves about the hip would shorten. The writer has witnessed a number of cases in which flexion deformity existed and division of muscles or stretching was necessary before an apparatus for a paralyzed limb could be properly adjusted.

Case I.—In 1895, I had a little patient, eighteen months of age, whose parents wanted to spend the summer in Maine, and although they were supplied with two or three braces, the little fellow was so heavy that he would soon get them out of repair. I determined therefore to put his foot in extreme extension and maintain this position at all hazards; so I resorted to plaster-of-Paris. I explained to the parents fully the length of time which this plaster must be worn, and I provided a wedge-shaped piece of felting so that a shoe could be worn with comfort, thus enabling the patient to get about with a great amount of ease. The child had an attack of poliomyelitis in September, 1894. The lesion was not an extensive one, but there remained a paralysis of the gastrocnemius and of the posterior tibial groups. It was on June 27, 1895, that my first observation was made, and although I provided him with the appliance above named on November 6, 1895, I found that the calcaneus was even more marked, in fact, that the brace had done no good. I proposed an operation for shortening the tendo Achillis, but it was not accepted, and I determined, for the present, at least, to put him in plaster-of-Paris, which I did on November 9th. It remained unchanged until December 7th. The tendo Achillis was perceptibly shorter; there were no excoriations when the plaster was renewed. It was reapplied at once and removed again on January 23d. The tendo Achillis was decidedly shorter and the foot could be brought in dorsoflexion only to 90°. The plaster was renewed on May 2, 1896, and again on June 1st, no excoriations at any time having appeared. At this last date I made a removable cast which he wore to December, 1896.

A note which I made on November 2d reads to the effect that it was impossible to bring the foot in flexion to 90°. The tendo Achillis was not only short but quite strong. I made him an apparatus at this time to correct the valgus, hoping thereby to secure some shortening of the posterior tibial. From this time I had no further trouble with the calcaneus. The apparatus was worn without any great strain, and it was easy to keep it in repair. From January, 1897, to March, 1900, I saw him from time to time, resorting to various measures to improve the posterior tibial, but without much avail. He developed an equino valgus. Even without his apparatus he would walk, and yet the tendo Achillis would remain short. I determined, therefore, to do some tendon-grafting, and on March 30th I made a long incision in front of the ankle, toward the inner side, exposing the tendons of the posterior tibial, anterior tibial, the flexor brevis pollicis and the common extensors. I detached the flexor brevis pollicis from its insertion and some tendons of the common extensors, and passing these ends through the buttonhole in the posterior tibial, just in front of the malleolus, fastened them with fine silk. I then dragged over the larger portion of the common extensor to the inner side and tied these to the posterior tibial with kangaroo tendon. Even under an anesthetic I was unable to stretch the tendo Achillis so that the foot would stand at right angles with the leg. I did not care to divide the tendon, but thought at the next dressing or so I should be able to complete the extension. This proved true, and on April 12th, less than a month after the operation, I succeeded in stretching the tendon so that the foot was brought quite to 90°. It was interesting to note how strong and large

[1] Read before the American Orthopedic Association, Washington, May, 1900.

the tendo Achillis was. The result of the operation, thus far, is very good. The child has now practically a normal foot. He can make flexion and extension without this annoying eversion of the foot. I have no fear whatever of any trouble with the original deformity, *viz.*, calcaneus.

Case II.—A girl, five years of age, came under my observation on January 27, 1898. Her attack of poliomyelitis was in July of that year, but a marked atrophy and the deformity did not begin until some time in October or November. I found the tendo Achillis quite long. The foot and leg were cold, the child as she walked used the heel. I obtained such excellent results in the preceding case that I spent considerable time in explaining to the parents the necessity for the treatment I proposed to adopt. This was the plaster-of-Paris in complete extension and it was continued unremittingly, the plaster being changed every three or four months until the fall of 1899, over a year and a half. It was interesting to note the development of the tendon and even of the calf, in spite of the plaster-of-Paris. There was fully one inch difference at the time. Now there is scarcely half an inch. She is wearing a little ankle-support and has a foot that is just about normal.

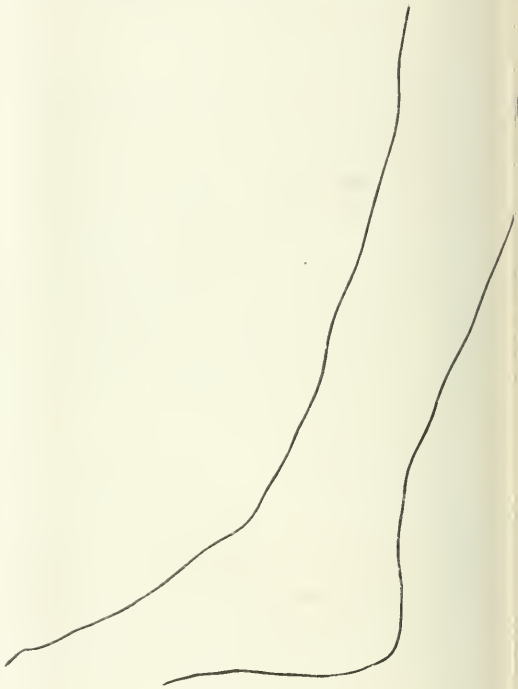
There are still under treatment two unfinished cases, but the result is already apparent, and, from my experience with those just reported, I feel assured that the final results will be equally good.

Case III.—This was a girl, three and a half years of age, from Cleveland, Ohio, whose poliomyelitis occurred when she was fifteen months of age. It was many weeks afterward before she was able to use the limb. When I saw her on March 16, 1899, she walked with a marked calcaneus limp, striking the heel first. The right limb from the anterior superior spinous process measured 17¾ inches, the left 18¼; from the umbilicus, right side, 19¼ inches; left, 20¼; thigh, 6 inches from the anterior superior spinous process, right side, 9¾; left, 10½. Right knee, 8; left, 8½; right calf, 6½; left, 7½. The foot was ½ inch shorter than its fellow and over the instep there was a difference of ¾ of an inch. The outline of the foot in March, 1899, is shown in Figure 1. On February 19, 1900, it was as shown in Figure 2. Figure 1 shows the position in which the foot naturally rested. Figure 2 was the best dorso-flexion I could make without the employment of great force. As she attempted to make dorso-flexion the great toe was drawn in, trigger toe,

FIG. 1.

Before Operation.

FIG. 2.



After Operation.

and she could not quite reach 90°. There was a little tilting of the pelvis, but no spinal curvature. The mother was very incredulous when I proposed the plaster-of-Paris treatment, and it was only after considerable argument that she consented to this treatment. She remained a few days in the city to see that the toes did not swell too much, and it was necessary to apply a second one before I got the toes and ball of the foot properly protected. The mother wrote me in June, but the letter was simply a record of the child's daily life; how well she got about and how little discomfort the plaster caused. I did not see her from March 21, 1899, until August 14th, nearly six months, when I removed the plaster, finding a little excoriation at the base of the toes, dorsal aspect, none elsewhere; the improvement was at least 50 per cent. The comparative measurements showed ½ inch increase in the length of the limb, no increase in the size of the thigh, a loss of ½ inch in the circumference of the calf. The plaster was reapplied, and on February 16, 1900, nearly a year from the beginning of treatment, the tendo Achillis was quite strong and the equinus had entirely disappeared. It was at this time that tracing No. 2 was taken. The thigh had increased a full ¼ of an inch, the calf remaining the same as in August. I decided to put on a third plaster bandage, which she is now wearing. I feel that I shall be able to omit all dressing of this kind during the early summer.

Case IV.—This was a boy, three and a half years of age, who came under my care October 17, 1899, with a marked calcaneus, his poliomyelitis developing in July, 1898. The fever was of sudden onset and it was eight or ten days before a diagnosis was made. The child screamed almost continuously, and it was found at the end of this period that his left leg was paralyzed, his right arm partially so. Two or three months later he began to walk. All at once the right arm recovered, and for the past three months he has been walking on his heel. The right ankle measured 8 inches, the left 7. The quadriceps extensor did not act well, while the thigh itself was 1½ inches smaller than its fellow. I put him under the same course of treatment and the plaster was removed for the first time on February 27, 1900. I found the gastrocnemius muscle very sensitive and it was difficult to extend the tendo Achillis. The position of the foot was excellent. The plaster was at once reapplied, and he is still under treatment.

These four cases are presented in evidence of the efficacy of prolonged and uninterrupted extension of the foot. I have not resorted to the method in the older patients, for the reason that it is difficult to keep plaster-of-Paris on a limb sufficiently long to secure a good position. I have not employed water-glass, nor have I attempted leather splints in these young children. I am now employing a leather splint reinforced by steel in front for an adult and it gives me much pleasure to add to this short paper and report an exceedingly interesting case of metatarsalgia, depending apparently on hysterical equinus, division of tendo Achillis, subsequent elongation of same, with a most persistent equinus resulting; finally relieved by prolonged extension.

Case V.—A lady, thirty-five years of age, came under my care September 29, 1896. She had suffered for a long time with metatarsalgia, and had been under the care of two distinguished surgeons in Philadelphia. At the time I saw her the pain was referred to the distal ends of the second and third metatarsal bones. There was a moderate amount of flatfoot, but the tendo Achillis was short and I could not flex the foot to 90°. There was no pain on pressure between the fourth and fifth metatarsals. I ordered a shoe built on a Spanish last, in order to correct the flatfoot, and I had the heels rather high, so that there would not be any strain on the tendo Achillis. Two months later the shoes were comfortable but there seemed to be too much pressure against the arch of the foot. She, herself, a trained nurse, had long since got the impression that her tendo Achillis was too short, so the latter part of December, 1896, she asked my permission to have a surgeon in a suburban town divide the tendon. I offered to make any suggestions to the surgeon if he so desired. A few days later, in response to a letter from this gentleman, I wrote him, giving in detail the steps of the operation, the subsequent management, etc. I insisted on a great amount of care in the management of the tendon, as I was afraid that she would abuse his treatment and get the tendon too long. On April 14, 1897, she reported herself perfectly free from her metatarsalgia, and gave this history: The operation had been done as instructed, the foot was put up in plaster-of-Paris, but she removed it in a few days "because of the development of gout." A brace was employed at this time and worn not very regularly. I found the tendon quite small. It was too long and there was a transverse depression into which one could put the finger, just near the point where the tendon joins the muscle. There was increased atrophy of the limb since the operation. I naturally felt that I could not be responsible for this condition, and advised that she keep the foot extended as much as possible and prevent dorsoflexion at any time. I saw very little of her during that year. On April 12, 1898, she told me that she had been very weak since the operation, and I found a very marked calcaneus; indeed, there was scarcely any of the tendon left. She had a good deal of spasm of the flexors of the toes and finally I urged the plaster-of-Paris with foot extended; in the meantime, however, I had a wedge-shaped piece of cork inserted in the heel of the shoe. Shortly afterward I applied a water-glass bandage, and while the water-glass was setting under the plaster, she became quite hysterical and the bandage had to be removed. On July 19th and 23d these were repeated with the same results, that is, great pain and objection to wearing any hard splint. It required a great

amount of persuasion to induce her to continue treatment of this kind. In August, 1898, there was evidence of increased growth of the tendon. I was obliged to employ a brace at this time, but under protest. On February 8, 1899, there was still a marked calcaneus, but she managed to get about fairly well with the apparatus. The toes annoyed her a good deal and on April 21, 1899, under ether, I divided the tendons of the flexor brevis pollicis and the common extensors, subcutaneously, and secured complete extension of the toes; in fact, brought them into flexion. The foot was likewise extended and plaster-of-Paris employed from the tips of the toes to the upper part of the calf, avoiding all pressure over the tendo Achillis. She was in hospital at this time and I could command better discipline. Within two or three weeks, however, she developed another hysterical attack. Her stomach "gave out" and I was obliged to resort to water-glass again, which she wore until August, 1899. Then I took a cast of her foot and had a leather splint made, reinforced well in front, with foot in pretty sharp extension. So the case progressed. My last observation was on March 23d of present year, and I found at this time a pretty strong tendo Achillis. In fact, it was just about normal. This depression had disappeared, and she was able to flex and extend the thigh with great ease. I saw her at this time in conjunction with Dr. Joseph Collins, who injected strychnine hypodermically into the calf muscles, as a remedy for her neurasthenia. The result on the whole, therefore, is excellent. It has been a most exasperating case in many respects, yet by persisting in the treatment I am able to report so favorably.

In conclusion, I may say that almost any appliance which is worn night and day, the management of which is taken completely out of the patient's hands, should bring about like results. My fondness for plaster-of-Paris has prejudiced me in its favor, and yet I can readily see how any other dressing which will meet the indications could be employed with equal advantage.

IN WHAT RELATION DOES OCCUPATION STAND TO TUBERCULOSIS?

By W. FREUDENTHAL, M.D.,
OF NEW YORK.

In order to answer the above question, we have to examine statistics, a task undertaken by many persons before me. I am aware that statistics as a rule have only a certain value, and even those that are the most thorough and exact are not such that we can draw absolutely correct mathematical conclusions from them. Especially the publications of statistics regarding tuberculosis number many hundreds and I do not intend to mention them here. Some of them will be discussed later on. It is noticeable, however, that in former years great stress was laid upon nutrition as an etiological factor, but it is difficult to say how far insufficient nutrition has to do with tuberculosis. Still I am inclined for many reasons to believe that in the etiology of tuberculosis poor nutrition has little to do and is perhaps only one of a great many of the causes. One important reason is that we see quite a number of well-fed and well-nourished individuals suddenly show signs of tuberculosis. Further, it has been noticed that in people who have had a hereditary tendency tuberculosis appeared in spite of the fact that they were constantly fed with a great deal of meat and other nourishing substances.

On the other hand it cannot be denied that people with limited and very small incomes—as has been shown by Gebhard—are much more prone to tuberculosis than those of the wealthier classes. Gebhard has studied this question thoroughly and comes to the conclusion that his results were always the same, *viz.*, the lower the average yearly income the higher the rate of tuberculosis; and the higher the average income, the lower the mortality of this disease.

Very similar investigations have been made in Hamburg, and it was found that the mortality of tuberculosis was as follows: Among one thousand taxpayers with an income of more than 3500 marks, 1.07; with an income of 2000 to 3500 marks, 2.01; with an income of 1200 to 2000 marks, 2.64; with an income of 900 to 1200 marks, 3.93. We see, therefore, that here, too, mortality keeps step with the reduction of the income.

That there are many other factors which play an important rôle here is undoubted. Thus the greater density of the population in the poorer districts and with this the greater possibility of infection have been discussed thoroughly enough in this country.

More important, however, than anything else is the occupation of the individual. While I am aware that a great many investigations have been made in this direction, and by competent observers, we have to admit that the results contradict themselves very frequently and cannot be utilized for accurate statistics. For this and many other reasons I have investigated the last 1576 cases of tuberculosis treated at the Montefiore Home in New York, *i. e.*, all the tuberculous patients during the past ten years. Out of the 1576 cases there were 1152 males and 424 females, ranging in age from five to seventy-two years. Before giving you the exact dates of my investigations, I must remark that the number of female patients (424) is too small and the exact occupation of most of them is too uncertain to allow any approximate conclusions. Thus, for example, we only know that by far the greater majority of the married women (241) gave their occupation as housewives. This might mean a great deal as to our question, or nothing. The exact data not being obtainable we shall omit them in deducing our conclusions. Still you will allow me to give you all the statistics, including those of the females also, which latter might per-

haps be used for some reference in the future.

Males.—The number of males was 1152; these ranging in age from five to seventy-two years; of these 670 were married and 463 were single.

Occupations.—These were as follows: Tailors, 183; operators, 99; peddlers, 96; clerks, 54; pressers, 52; cigarmakers, 46; shoemakers, 30; cloakmakers, 30; painters, 27; furriers, 20; shirtmakers, 18; laborers, 12; capmakers, 13; cutters, 12; salesmen, 24; printers, 12; waiters, 11; tinsmiths, 11; agents, 13; school-boys, 10; bookkeepers, 10; merchants, 18, butchers, 9; barkeepers, 8; watchmakers, 8; carpenters, 8; bakers, 8; musicians, 7; machinists, 7; cooks, 7; drivers, 6; buttonhole makers, 6; paper box makers, 5; nurses, 5; photographers, 5; teachers, 6; conductors, 5; stand-keepers, 5; plush-case makers, 4; porters, 4; frame makers, 4; glassblowers, 4; book binders, 4; barbers, 4; cigarette makers, 4; workers on brass, 3; druggists, 3; locksmiths, 3; store-keepers, 3; packers, 3; spinners, 3; pocket-book makers, 3; pearl button makers, 3; necktie makers, 3; weavers, 3; rubber goods makers, 3; dressers, 2; gardeners, 2; trunk makers, 2; brush makers, 2; glass cutters, 2; collectors, 2; compositors, 2; housekeepers, 2; hallboys, 2; workers on passementeries, 2; bookkeepers, 2; typesetters, 2; trimmers, 2; hotelkeepers, 2; spongers, 1; brushers, 1; glovemakers, 1; workers on silverware, 1; gasfitters, 1; overgaiters, 1; real estate business, 1; canvassers, 1; makers of fancy cases, 1; basketmakers, 1; bandagists, 1; gummakers, 1; papermakers, 1; springmakers, 1; artists, 1; diamond workers, 1; diamond polishers, 1; worker on novelties, 1; fishermen, 1; caterers, 1; superintendents, 1; booksellers, 1; coppersmiths, 1; cordmakers, 1; reporters, 1; signers 1; finishers, 1; founders, 1; upholsterers, 1; drummers, 1; shipping-clerk, 1; rag assorters, 1; messenger boys, 1; newspapers 7; paper hangers, 1; tanners, 1; keeper of baths, 1; telegraph operators, 1; auctioneers, 1; ironers, 1; bottlers, 1; hatmakers, 1; watchmen, 1; janitors, 1; workers in lead factories, 1; jewelers, 4; instrument makers, 1; blacksmiths, 1; electricians, 1.

Those not accounted for have no occupation indicated.

Females.—The total number of females was 424; these ranged in age from six to sixty-six years. Of this number 241 were married and 134 were single.

Occupations.—These were as follows: Servants, 27; housewives, 19; tailoring, 18; seamstresses, 9; necktiemakers, 7; salesladies, 6; shirtmakers, 6; schoolgirls, 5; operators, 5; cigarmakers, 4; workers on white goods, 3; hatmakers, 2; cooks, 2; finishers, 2; midwives, 1; flowermakers, 1; feathermakers, 1; trimmers, 1; workers on furs, 1; cigarettemakers, 1; dressers, 1; milliners, 1.

Those not accounted for have no occupation indicated.

There is one striking fact in looking over the above statistics, *viz.*, the extraordinary large number of tailors and those with similar occupations who were suffering from tuberculosis. Of course we have to take into consideration that the bulk of the inmates of the Montefiore Home is made up of Polish and Russian Jewish immigrants, who as a rule land in this country with very little or no means. They learn that trade which will yield them some income in the shortest possible time, *viz.*, tailoring, "operating," etc. To this trade they adhere until they get sick. You all know better than I am able to describe it the dreadful condition of the sweatshops in which these people are forced to work from ten to sixteen hours a day, and that in the worst imaginable atmosphere. I will only add that when these modern slaves come home from work they do not get into better surroundings. The atmosphere of their homes—if you can call such dungeons homes—is, if possible, worse than in the sweatshops. A small room inhabited by six to eight persons and used as kitchen, dining-room, bedroom, etc., with no direct light, almost entirely dark all day long in the rear of a tenement-house, is nothing unusual in the metropolis of the United States. The liberty of building such pestholes for the sole benefit of the owners of these houses has become one of the greatest crimes in New York City which, as yet, is not punishable by law. You will not be surprised, therefore, at the great number of such people who acquire consumption. If I only class the tailors, operators, pressers, cloakmakers, capmakers and cutters in one group, as they are the ones most subject to the sweatshop slavery, we have among 1152 male tuberculous patients not less than 389 of this class. In other words, more than one-third of all consumptives were tailors and workers in allied trades. If in general one-seventh of all deaths occur from tuberculosis, how is it that we have here more than one-third of all tuberculosis cases?

It is a well-known fact that tailors as a rule are more predisposed to tuberculosis than those in other vocations. This may be due to their bent position, lack of proper exercise and other causes. Even in the armies, as for example the German army, where more attention is paid to hygienic measures, the mortality-rate from tuberculosis of those men who do the tailoring work is, according to Schjerning, much higher than those who do active service. Still there is nowhere such an abnormal proportion as we find among the tailors in New York City. In studying this question we naturally have to ask for the reasons of such increased infection. The habitus, lack of exercise, bad ventilation, overwork, undernutrition and lack of all hygienic precautions, all tend to produce that condition *par excellence* for which Bouchardat has invented the genial name of "physiological misery." Perhaps this will lead us to understand the earlier periods of the tuberculous disease. I have expressed my opinion elsewhere that consumption is primarily a trophoneurotic affection of both a general and local nature. It is only later that an

invasion of the tubercle bacilli takes place. Some believe that the primary seat of this neurotic affection lies in the medulla oblongata with special implication of the vagus nuclei; Thomas J. Mays and others are convinced that phthisis is alone due to an affection of the vagi. This latter assertion cannot be perfectly correct, for only the trophic fibers are affected, while the pulmonary branches of the vagus carry motor, sensory and centripetal and centrifugal vasomotor fibers also. Strebel, for example, does not believe, and I agree with him there, that the trophic fibers of the vagus alone are affected, but that the nerve takes part in the general trophic insufficiency in the consumptive; that secondarily, perhaps, degenerations in the vagus and medulla may be seen is very plausible.

In this connection you will allow me to quote from an excellent article written some years ago by Dr. Solomon Solis-Cohen[1] of Philadelphia. His standpoint is somewhat similar to mine. He says: "That condition which makes the human tissues a receptive soil, a favorable culture medium for the tubercle bacillus; that condition which of old was called diathesis and now susceptibility, is itself a disease, a departure from the normal; and I believe it to be the most important element in the morbid complexus termed tuberculosis." This condition he calls with Jaccoud, hypotrophy, *i. e.*, defective nutrition. While the term hypotrophy characterizes quite well certain conditions of the prebacillary stage, it does not cover the whole ground. There must be present some *humoral* defect, or insufficiency, in the tissues of the organism, which as yet has not been demonstrated in the blood circulation but of which I have no doubt we shall hear more in the future. Thus far nothing has been published that could give us any satisfactory evidence about this lack of good circulation, but nevertheless it does exist. When such a person with trophic and circulatory insufficiency, as I might call it, develops in any part of the body favorable conditions for the development of microbes, we are sure that tubercle bacilli will flourish here and a local and afterward a general infection is bound to take place. I have demonstrated this for the retropharynx and believe that in many cases the primary infection takes place there, a belief that was confirmed by prominent men here and abroad, as for example, Prof. Chiari of Vienna, Prof. Seifert of Würzburg, and many others. Dr. Solis-Cohen is not of the opinion that the tubercle bacillus of itself originates the disease, "while it is perhaps the most important of several microbes that influence the progress of the lesions in various forms of the disease." This idea of Dr. Cohen's which seems to be spreading here and abroad seems not to be perfectly correct. While I have always admitted that there must be something else besides the tubercle bacilli to produce the disease, I have shown in the above experiments that tuberculosis does develop when once the tubercle bacilli find a fertile soil to thrive in, be this primarily in the retropharynx or at any other part, which was temporarily the *locus minimae resistantiae*.

Let us apply this to our tailors and we see the following: For years and years numbers of these men come to my throat department for treatment. Their complaints are so uniform and so characteristic that I need not ask them for their occupation; I know they are tailors. They all have a more or less dry, atrophic condition of the mucous membranes in the nose and throat, and they all have a postnasal catarrh. That this catarrh with its stagnating, adhesive, dried secretion which lies at the retropharynx for weeks, is the best culture medium for the tubercle bacillus I have shown elsewhere. I will only repeat here that I have seen tuberculous ulcerations develop at this place, thus proving, as I believe, that there was an open door for the invasion, settlement and development of the tubercle bacilli. How general tuberculosis develops from this spot and spreads to the lungs, etc., as well as for other details, I have to refer to my article.[1]

On the other hand, I have examined 75 consumptives at random. Of these 37 did not complain at all of their throat or nose and 38 did, *i. e.*, about half on each side. Of the 37 patients who did not complain not less than 23 showed marked abnormalities in their nasal passages and in only 14 were there no marked changes at all. Although these examinations are not extensive, I am sure that they will prove convincingly that consumptives suffer from nose and throat troubles not only as much as but more than other people. Two-thirds of those who did not complain had some kind of affection of the throat or nose, and naturally the others who did complain showed lesions of the parts also.

In conclusion I will say that in this paper I had to limit myself to almost one sort of occupation, but it will readily be seen that this one is only a prototype of many others living under similar conditions, and my general conclusion is in accordance with Flint's, "that occupation has an agency in the etiology of pulmonary tuberculosis, in so far as it is sedentary and involves confinement within doors. If it be said that this conclusion is in accordance with what is already known, I answer, that the correctness of the conclusion is thereby made the more certain."

New York Board of Health and Plague.—Michael C. Murphy, President of the Board of Health of the City of New York, has given out some of the preliminary plans for a new bacterial laboratory for the municipality. It is to be a one-story building, built according to the best models and is to be devoted solely to the investigation of the bacillus of the plague. It is to be situated somewhere near the Willard Parker Hospital.

[1] Tuberculosis, Vol. I., Hare's System of Therapeutics, 1890.

[1] Kleinere Beiträge zur Aetiologie der Lungentuberkulose. *Archiv für Laryngologie*, Bd. V., 1896. *Annals of Otology*, February, 1897.

MULTIPLE TRAUMATIC HEMORRHAGES OF THE LIVER ASSOCIATED WITH MULTIPLE PULMONARY EMBOLI OF LIVER-CELLS AND GIANT CELLS RESEMBLING BONE-MARROW CELLS.[1]

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THE microscopical appearances in trauma of the liver have been but rarely the object of pathological investigation, and only within recent years has it been shown that as a result of injuries to this organ its parenchymatous cells may be set free into the blood-stream, and through metastasis lead to the formation of liver-cell emboli in the blood-vessels of the lungs.

Turner in 1884 was the first to observe free liver-cells lying within the hepatic vessels, and to draw an analogy between this occurrence and that of fat-embolism. In 1886 he saw two other cases of a similar condition, and following him Jürgens, v. Recklinghausen, Schmorl, v. Zenker, Pilliet, Prutz, Klebs, Hess, Lubarsch and Flexner have reported observations of the metastasis of liver-cells and the formation of liver-cell emboli in the pulmonary vessels. Retrograde metastasis of these cells into the cerebral and renal veins has been seen by Schmorl and Lubarsch, and the same observers have also seen a paradoxical metastasis of liver-cells in cases of patent foramen ovale. In these the liver-cells were found in the capillaries of the brain, kidneys, and other organs, while emboli of the same cells were found blocking the foramen.

The pathological conditions associated with or leading to this metastasis have been as follows: Traumatic rupture and laceration of the liver, hemorrhage and necrosis of the organ in eclampsia, sepsis, acute yellow atrophy, abscess, gumma, scarlet fever, chorea and delirium tremens. In the cases of traumatism large masses of hepatic tissue have been found plugging the larger branches of the pulmonary arteries. The more severe the injury to the liver the larger and more numerous are the emboli found in the lung. In eclampsia, sepsis, etc., the transported cells are usually single or in small groups. No evidence of proliferation in the cells thus misplaced has been observed. Both observation and experiment show that they undergo an early necrosis.

In intimate association with the development of our knowledge concerning liver-cell embolism has been that of the general theory of parenchymatous cell-metastasis. Emboli of placental cells in the pulmonary capillaries were discovered by Schmorl in 1893 to occur in cases of puerperal eclampsia, and especial significance was attached by him to their presence as having a causal relation to the condition or to some of its important symptoms. It has since been found that these emboli, while frequent, are not constant in this disease, and they have been shown to occur in pregnant women without eclampsia (Lubarsch, Leusden, Kassjanow). Doubt as to the placental origin of these cells has also been raised by Aschoff who found similar cells in many widely-varying conditions.

Almost coincidentally with Schmorl's discovery Lubarsch observed large giant cells in the pulmonary capillaries which he regarded as bone-marrow cells. Similar findings were soon after reported by Aschoff and later by Maximow. Aschoff, however, is in doubt as to the origin of these giant cells. Having found them in two cases of eclampsia he considers the possibility of their identity with the cells described by Schmorl, and since he found the same cells in cases of erysipelas, pneumonia, diphtheria, cholera, carcinoma, leukemia, peritonitis, burns of skin, fractures, etc., he rejects the assumption that they are of placental origin, and considers them as being most probably bone-marrow cells. Lubarsch in reply to Aschoff holds that the cells described by the latter are not identical with the bone-marrow cells observed by him, nor with the placental cells of Schmorl. The questions raised by Aschoff remain at the present time unsettled, and the origin of these cells has not yet been definitely proved.

Pulmonary emboli of kidney-cells have also been described by Schmorl, but these have been shown to be undoubted artefacts. Further, portions of bone and medullary substance have been found in the pulmonary capillaries, and Welch has noted the presence of "splenic" giant cells in the liver-capillaries. Our present knowledge of parenchymatous cell-metastasis is, therefore, limited to that of hepatic tissue, bone-tissues, and certain large poly- or mononuclear giant cells which are thought to be either placental cells, splenic or bone-marrow cells.

The case which I report in this paper is of interest as being an addition to the small series of cases of liver-cell embolism already described, and also because of the occurrence of multiple pulmonary emboli of giant cells similar to those observed by Schmorl, Lubarsch and Aschoff. The case is from the surgical clinic of Dr. Nancrede.

Wm. G., aged twenty-four years, an unmarried farm-hand living in the country near Ann Arbor, was brought to the University Hospital on the morning of August 18, 1899. He had fallen from a beam in the barn where he had been working, and had alighted upon the upright handle of a pitchfork which had entered his perineum to the left of the anus. The force of the fall had been so great that the handle had been driven upward into the body to a distance of twelve or more inches, "as far as his stomach." The injured man had withdrawn the handle before his condition was discovered.

The patient when brought to the hospital was suffering from shock and his condition was so serious that a diagnosis of severe laceration of the intestines was made and he was at once operated upon by Dr. Nancrede and Dr. Darling. A median incision was made below the umbilicus.

[1] From the Pathological Laboratory of the University of Michigan, Ann Arbor.

Free fecal matter was found in the abdominal cavity. The intestines were very hyperemic and showed five or six distinct bruises in different portions. Two areas were so badly crushed that they appeared almost gangrenous. These were situated in the transverse colon and in the lower portion of the ileum. Blood-clots and fecal matter were found in the pelvis, the pelvic peritoneum was badly torn and bruised and the retroperitoneal tissues infiltrated with blood. In the anterior wall of the rectum, about three inches above the anus, there was an elliptical, ragged tear about three or four inches in circumference. The edges of the wound were covered with fecal matter which also protruded from the opening. Just above the anus a second laceration of the rectum was found, communicating directly with the external wound found in the perineum to the left of the anus. From the position of these wounds it seemed evident that the pitchfork handle passed through the perineum and the rectal wall just above the anus, then obliquely upward across the rectum, through its wall higher up, then through the floor of the pelvis toward the abdominal cavity where, glancing from the brim of the pelvis, it caught the intestines, pushing them violently upward toward the diaphragm. The tissues about the brim of the pelvis were bruised and infiltrated with blood. No marks of injury to the liver or stomach were noticed. The free fecal matter in the peritoneal cavity came entirely from the tear in the rectum.

The injury to the intestine was so widespread and so severe that resection of the damaged loops was considered to be out of the question and an unfavorable prognosis was given. The serous surfaces of the most severely injured portions were approximated, the abdomen washed out, drainage-tube and gauze inserted in the rectal wounds and the abdomen closed. The patient did not recover wholly from the shock, developed a general peritonitis, and died three days later.

The autopsy was conducted by me in the pathological laboratory one hour after death. The following notes are taken in condensed form from the laboratory protocol. Owing to the limited time for making the autopsy the organs were not weighed or measured.

Autopsy-protocol.—Body of rather slender build, well-formed. The musculature is fair and in good condition; there is a moderate amount of panniculus. There is no edema. There are pale hypostatic patches over the back. *Rigor mortis* is present only in the muscles of eyes and jaw. Body-heat is present.

There is a recent laparotomy-wound in the median line below the umbilicus covered with surgical dressings. On removing these a clean wound with adherent edges and stitches in position is seen. On separating edges of wound no pus is found. In the perineum on the left side of the anus there is a ragged, irregular opening containing drainage-tube and gauze. On removing these an opening about three inches in circumference is found, its walls ragged, greenish-gray in color and covered with dark-colored pus.

The abdomen is opened by an incision to the right of the median line. The peritoneal cavity contains a small amount of fluid which is cloudy and hemorrhagic and contains fibrin-masses and a few small bits of fecal matter. The coils of intestines are adherent and covered by a fresh fibrinous exudate which is partly hemorrhagic and partly greenish-gray in color. At the site of the laparotomy-wound the intestines and omentum are adherent to the anterior abdominal wall by strings of fibrin which are easily separated. The omentum is partly rolled up, very much thickened, hyperemic, and adherent to the peritoneum about the edges of the laparotomy-wound.

The serosa of the intestines is swollen, partly red and partly gray in color, and covered with a thick layer of fibrin. Five or six loops of the small intestine and the middle portion of the transverse colon are gangrenous. In two of these gangrenous loops the intestinal wall had been folded in, the serous coats approximated by means of sutures which are still in position. No perforation in the intestinal wall can be found in any portion, although the gangrenous areas are very soft and friable. The mesentery corresponding to these gangrenous loops shows distinct evidence of bruising. It contains numerous extravasations. The serosa of the appendix is slightly swollen and covered with fibrin.

There is a large retroperitoneal extravasation about the brim of the pelvis, most marked at the bifurcation of the abdominal aorta. The wall of this vessel shows a number of small hemorrhages. The floor of the pelvis is covered with a thick layer of fibrin, and shows also a diffuse purulent infiltration. In the wall of the rectum there is a ragged tear, the edges of which are covered with foul greenish-gray pus. Small collections of pus are found in the surrounding tissue.

On opening the intestines, the mucosa of the jejunum, ileum and transverse colon shows dark-green, softened and friable areas corresponding to those already described. In the rectum are two irregular perforations, one just above the anus, communicating with the external wound; the other is in the anterior wall diagonally opposite, three inches higher up. The mucosa of the rectum is deep-red in color, about the perforations it is grayish-green and swollen. The upper tear is elliptical in shape, about four inches in circumference, its edges are ragged and gangrenous. The fat-tissue about the rectum is hemorrhagic and contains small collections of pus.

Stomach.—Along the greater curvature and over the anterior wall there are small scattered hemorrhages. The serosa is thickened. Otherwise it appears normal. The *spleen* is moderately enlarged, soft and hyperemic. The examination of the *adrenals, kidneys,* and *pancreas* is negative.

Liver.—This is much swollen, its edges rounded and the anteroposterior diameter much

increased. The capsule is covered with patches of fibrin. Beneath it there are numerous irregular, dark-red areas, from one to three cms. in diameter. There are also a few yellowish areas of same size and shape which are surrounded by a hemorrhagic zone. On section the cut surface shows many minute lacerations of the liver-substance which are filled with coagulated blood. These are most numerous near the capsule and toward the lower edge of the organ. In almost every instance the hemorrhage arises from the smaller branches of the portal, the walls of which show numerous small tears. Both the hepatic and portal branches contain clots, some of which are quite firm. The larger hemorrhagic areas involve several lobules and extend into the intralobular veins. Immediately around the hemorrhages there is a yellowish, softened zone. The consistency of the organ as a whole is decreased, and the parenchyma is cloudy and of a pale-yellow color. No large rupture of the organ is found, and the external surface shows no marks of direct injury.

The examination of the *genital organs* is negative. The *head* and *spinal cord* were not examined. The *thyroid* is slightly enlarged; otherwise the examination of the neck-organs is negative. The *heart* presents no pathological appearances.

Lungs.—The pleuræ are slightly cloudy and are covered with a fine layer of fibrin. There is a small amount of cloudy fluid in each cavity. Numerous dark-red areas are seen beneath the pleura. These are of firm consistency. On section the parenchyma is very hyperemic and contains many fresh hemorrhagic infarcts. These are for the greater part small in size and are most numerous just beneath the pleura, although occurring throughout the lung. An abundant foamy fluid is obtained on slight pressure. Numerous small, firm thrombi are found in the smaller branches of the pulmonary arteries. These are most numerous in the right lung. There are also firm clots in some of the larger branches of the pulmonary artery and veins.

Microscopical Appearances. — Material was taken from all of the organs and fixed in alcohol and bichloride of mercury. Portions of the lungs, kidneys and liver were also fixed in Flemming's solution, because of the suspicion that fatty embolism might be present. Besides the staining methods commonly used, polychrome methylene blue, Ehrlich's triacid, etc., were employed as specific stains in the study of the giant cells found in the pulmonary capillaries. The interest of the microscopical examination centers about the liver and lung.

Liver.—The sections of the liver show hemorrhages of various sizes. The liver-lobules are torn apart by extravasations which in almost every case can be seen to come from ruptures in the walls of the portal branches. The larger extravasations involve several lobules, and in some cases extend into the central vein, the walls of which are torn. The liver-cells bordering upon the extravasation are necrosed, their nuclei partially or entirely gone, their protoplasm granular and staining deep pink with eosin. In many cases portions of liver-rods lie in the extravasations separated from the remaining portion of the lobule by blood and fibrin-masses. The liver-cells are necrosed, but the outline of the liver-rods is preserved and the nuclei of the endothelium still stain. Single necrosed liver-cells lie also scattered and in small groups throughout the extravasations and in the hepatic vessels. These cells can be told only by their size, irregular outline, and their granular, deeply-staining protoplasm, as their nuclei are entirely gone. Around these necrosed cells are masses of hyaline and fibrogranular fibrin. In the sections stained with Weigert's fibrin-stain all of the fibrin stains violet and can be seen completely surrounding the necrosed cells. Fibrillæ of fibrin are also seen attached to and apparently arising from single dead cells. Desquamated and necrosing endothelial cells are also found in the blood-clots of the extravasations, but may be distinguished from the dead, loosened liver-cells by the fact that the latter differ in size and shape, stain more deeply red and are more granular.

Throughout the blood-clots of the extravasations and also in the hepatic veins there are numerous irregular, faintly-outlined, granular masses staining a faint dull pink with eosin, and possessing a slightly yellowish tint. The majority have no vestiges of nuclei remaining, but in sections stained with alum-carmine faint nuclei may be made out in some of them. They do not stain with Weigert's fibrin-stain. They are undoubtedly dead cells, and as all stages of disintegration exist between these and the recognizable liver-cells it may be safely inferred that they are liver-cells far advanced in necrosis and liquefaction. All of the vessels of the liver are congested, and both portal and hepatic branches contain thrombi in which liver-cells as described are found. No fatty embolism is present. The yellowish areas around the hemorrhages consist of necrosing liver-tissues, and the parenchyma of the organ shows throughout a moderate degree of cloudy swelling.

Lung.—All of the smaller pulmonary arteries contain thrombi which either partially or completely obturate the vessel. In these thrombi are found the same faintly-outlined, granular, eosin-staining masses which are present in the liver-vessels and which in that organ were shown without doubt to be liver-cells. These cells are free or scattered in small groups throughout the fibrin-masses of the thrombi and do not stain with Weigert's fibrin-stain. They cannot be blood-plates, fibrin, necrosing endothelium, or degenerating leucocytes, but from their resemblance to the dead liver-cells found in the hepatic vessels must be necrotic liver-cells. This view is further conclusively proved by the discovery of one small portion of liver-lobule in which the outline of the liver-rods is preserved and the nuclei of the endothelium still stain. I am un-

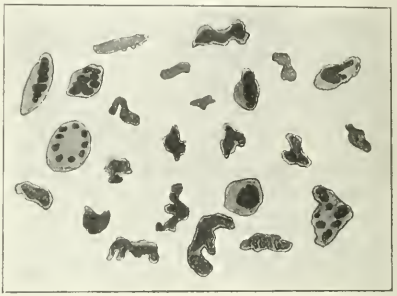
able to find any remains of liver-cells in the lung-capillaries.

A low-power survey of sections taken from any part of the lung shows in the capillaries of the alveolar walls and in the smaller arterioles deeply-staining masses of chromatin, some appearing almost black. They are very irregular in size and shape, but for the greater part are elongated. There is an evident distention or bulging of the capillary at the point where these masses are found. Three to six may be found in some low-power fields. Under the high power these dark masses are seen to be the deeply-staining nuclei of giant cells which are blocking the lumen of the smaller capillaries. These cells are for the greater part mononuclear, but a number of multinuclear ones are found. In the majority of cases no cell-protoplasm can be made out; the cell-nucleus is pushed into the lumen of the capillary and stretched out into a great variety of forms, club, knob-shaped and nodular masses of a coarsely-granular chromatin. In other cases a faintly-staining (with hematoxylin) protoplasm is made out, while in the free giant cells found in the lumina of the large arterioles, which lumina they do not fill, a hyaline plasmodial protoplasm is found. In these conditions the size and shape of these giant cells are easily studied since they are not affected by pressure or crowding. Only a few of these were found, the majority of the giant cells being pushed into the small capillaries.

The further study of these new cells shows them to be very large with a considerable amount of a plasmodial protoplasm resembling that of the syncytial cells of the chorion. This tinges with either hematoxylin or eosin, but more heavily with the former. With alum-carmine it appears light brownish. The cells are either mono- or multinuclear, in the latter case the deeply-staining nuclei are clustered in the central portion of the cell or at the periphery. The size of the chromatin masses blocking the capillaries varies greatly (about 12-16 microns in width and 30-100 microns in length). The free cells in the larger vessels are oval or round, of the size of bone-marrow and placental giant cells, and correspond to these in all respects. The variations in size and form of the capillary emboli are due to the shape of the vessel and the manner in which the cell is crowded into them. The nucleus is drawn and bent according to the windings of the capillary. The fact that the protoplasm cannot be seen in many instances may be explained by the possibility of its having been pushed off from the nucleus as the cell was crowded into the narrow lumen of the capillary.

No granulation can be brought out in the protoplasm by staining with Ehrlich's triacid or Unna's polychrome methylene blue. In this respect the cells resemble the giant cells of the bone-marrow, spleen and placenta. In the sections stained with polychrome methylene blue the body of the nucleus appears as a highly refractive hyaline body on the surface of which lie the granules of deeply-stained chromatin. In a few cells small skeins of chromatin granules project out into the cell-protoplasm. This may be taken as evidence of beginning degeneration, but no other signs of retrograde changes could be found. The nuclei of all the giant cells found are stained very deeply, and no fragmentation or diffusion of the chromatin could be found. No evidences of coagulation processes in association with these cells were found.

Fig. 1.



Forms of giant cells found in the pulmonary vessels. The large cells, showing definite cell-body, are from the small arterioles; the irregular nuclear forms with little or no protoplasm are from the capillaries. Leitz Obj. 7, No. 2. Eyepiece. Camera-lucida drawing. Reduced to two-thirds.

In addition to these changes the lungs showed extreme congestion and edema, and small hemorrhagic infarcts in great number. There were also numerous areas of beginning bronchopneumonia.

The microscopical examination of the other organs showed a universal congestion. No giant cells were found elsewhere, although especial search was made for them in the spleen, liver and kidneys. In the material fixed in Flemming's solution no fatty embolism was found and no evidence of cell-division in the giant cells just described.

At the time of discovery of these giant cells I was struck with the resemblance between them and the cells which had been pointed out to me as placental cells in the lung-capillaries while working in Schmorl's laboratory in Dresden two years ago. Fortunately, in addition to mounted specimens of eclampsia brought from that laboratory containing pulmonary emboli of giant cells which had been demonstrated to me as placental cells, I had brought back a number of paraffin-blocks from two cases of eclampsia which were said to contain these emboli in large numbers. On comparing the sections of the lungs from these cases of eclampsia with those from the case just described, I am unable to make out any difference between the "placental cells" and the giant cells found in my case. Dr.

Dock, to whom I have shown the specimens, agrees with me as to the similarity of the cells found in the two conditions. I have further been unable by means of any special staining, glycogen-test, etc., to make any differential diagnosis between them. The multinuclear cells are more abundant in the eclampsia cases, but no structural differences exist between them and those just described.

The giant cells in my case are *not* placental cells, and they cannot be distinguished from the cells in cases of eclampsia which have been called placental cells; therefore, the doubt naturally arises as to the true source of the cells found in the eclampsia cases. Are they not the same cells as those found by Aschoff, Lubarsch and myself, and have they not the same source of origin? I am able not only to confirm Aschoff's doubt as to the placental origin of these cells, but to refute the criticism of Lubarsch that the cells seen by Aschoff were not similar to those found by Schmorl in eclampsia. The description and illustrations given by Aschoff coincide perfectly with some of the appearances found in my case; and Schmorl's descriptions of the placental cells and Lubarsch's of the bone-marrow cells likewise apply to cells found in this case. Further the cells in specimens of eclampsia from Schmorl's laboratory are so similar that no differential diagnosis can be made between them. Likewise the giant cells found by Leusden in the lung-capillaries in two cases of eclampsia and in two cases of pregnancy without eclampsia correspond to these.

While I am far from denying the possibility of the cells in the eclampsia cases being placental cells and while I am willing to concede that they are, I am in a position to affirm that we have as yet no means of distinguishing them from the giant cells found in the lung capillaries in other conditions in which no placental cells can exist, and that the diagnosis of placental-cell emboli rests at present upon no certain basis. Where villi or portions of villi or decidua pass into the circulation there can, of course, be no doubt as to the origin, but in the case of single giant cells there are no peculiarities of size, form, nucleus or staining that will differentiate placental cells and the other giant cells found in the lung capillaries. The descriptions of Schmorl, Lubarsch, Leusden, Kassjanow and Maximow, respectively, may be applied to cells found in my case.

That the periplacental giant cells may be set free into the circulation by means of direct force exerted upon the uterus (kneading, etc.) Maximow has shown by many experiments made upon pregnant rabbits. In animals whose pregnancy ran a normal course he was unable to find such placental-cell emboli. In the cases where the uterus was subjected to direct injury he found that the placental-cell emboli were not the plasmodial cells of the syncytium, but only the periplacental giant cells and the glycogen-cells of the decidua were set free into the blood-stream and carried to the lungs. There is no reason to doubt the possibility of such an occurrence in the human subject, but the question arises as to the possibility of identification of these cells after their metastasis into the lung-capillaries. If the cells in the two cases of eclampsia which I have studied are decidual cells, then I must hold that this possibility is very slight or with the present technical methods does not exist. It is, of course, possible that these cases of eclampsia are not typical ones and that the cells are not characteristic, but I am unable to find in the various descriptions of the placental-cell emboli any points which will differentiate these from the cells found in my case. Further, the study of sections of the placenta and uterus-wall containing numerous periplacental giant cells shows that many of these resemble the giant cells in my case, and I must confess my inability to distinguish between them. They have no peculiarities of morphology, and the glycogen-test is too unreliable to be used as a differential point.

The question of placental-cell embolism has at the present time about the following status. Schmorl holds that the metastasis of placental cells into the pulmonary vessels occurs only in eclampsia and bears a direct etiological relation to this condition. According to his view the presence of the placental cells in the capillaries of the lung leads to extensive coagulation and thrombosis which he regards as being the direct cause of the more striking phenomena of eclampsia. The constant presence of placental-cell emboli in eclampsia is confirmed by Lubarsch, who found them also in a case of chorea gravidarum without eclampsia; therefore, he holds that these emboli are not the cause but the result of the convulsions of eclampsia. Lubarsch further combats Schmorl's theory by the statement that liver-cell emboli lead to much more extensive thrombosis of the pulmonary capillaries than those of placental cells, but that the former is unaccompanied by eclampsia-like phenomena. Leusden found placental-cell emboli in two cases of eclampsia and also in a case of phthisis dying a few days after delivery and in a case of puerperal sepsis in which death occurred eight days after delivery, both of the latter having no eclamptic symptoms. He therefore holds that placental-cell metastasis is accidental and irrelevant and occurs in puerperal conditions other than eclampsia and will probably be found in normal cases of pregnancy. His lack of material prevented his confirming this hypothesis.

In 1896 Kassjanow published the results of numerous investigations upon the lungs of women dying an accidental death during pregnancy and the puerperium, but who had not suffered from eclampsia. In all cases he found in the pulmonary capillaries emboli of multinuclear giant cells resembling those of the syncytium and corresponding in all respects to the cells described by Schmorl; and he therefore

came to the conclusion that placental-cell embolism is a physiological process and may be found in every pregnancy.

In 1898 Maximow published an account of experiments made upon animals in order to determine if the metastasis of placental cells was a physiological or pathological process. As a result of the thorough examination of the lungs taken from forty rabbits killed in different stages of pregnancy he found no placental cells in the blood or in the pulmonary vessels. In animals in the latter half of pregnancy where direct force was exerted upon the uterus just before the animal was killed, he found periplacental or decidual giant cells in the lung-capillaries, but only in one case a single cell which he thought might be a syncytial cell. In the early stages of pregnancy such embolism was not produced, and he explains this by the fact that the periplacental cells do not exist at that time. In the lungs of normal rabbits, male and female, pregnant and non-pregnant, he also found giant cells which he says have no resemblance to the placental cells; but unfortunately he does not point out the differences between them, and calls them bone-marrow cells without giving any adequate differential diagnosis. From his experiments he concludes that placental-cell embolism is not physiological in the rabbit but may be produced by direct injury to the uterus and its contents, and that the cells set free are not the syncytial cells, as claimed by Schmorl to form the emboli in the human subject, but are the periplacental cells and the glycogen-cells from the decidua.

It will be seen from the above that the status of placental-cell embolism is still very uncertain and that the questions concerning the origin and significance of the process remain yet to be settled. The study of the small amount of literature upon the subject shows that even among these original investigators there is a confusion as to the exact nature of the placental cell. For example, Schmorl describes a case of placental-cell embolism in a pregnant rabbit dying suddenly with symptoms of eclampsia. Maximow advances the proposition that the giant cells seen in this case were not placental cells but bone-marrow cells. Certainly if any one was qualified to distinguish between placental and bone-marrow cells it might be supposed to be Schmorl. Further, Maximow claims that the cells seen by Leusden in his cases of phthisis and puerperal sepsis are not placental cells but bone-marrow cells similar to those seen by Aschoff, but he accepts Leusden's statement that the emboli found in his two cases of eclampsia are composed of placental cells. According to the description given by Leusden the cells in all four cases are the same. As stated in the introduction to this paper, Aschoff who found giant cells of the same kind in eclampsia and in many widely-varying conditions concludes that they are all of bone-marrow origin, while Lubarsch, the original investigator of bone-marrow-cell embolism, claims that Aschoff's cells are not the bone-marrow cells seen by him and that they differ from the placental-cells of Schmorl. He makes this statement, however, without the support of any differential diagnosis.

We must, therefore, conclude that the variety of giant cells found as emboli in the lung-capillaries in different conditions is sufficiently great to cause confusion, and that these various kinds have not yet been so differentiated and described that their identification rests upon a secure basis.

An examination of the lung-sections taken from the last twenty-five autopsies made in this laboratory shows the presence of pulmonary emboli of giant cells in four cases. These are: (1) Fatal anemia (epistaxis); (2) leukemia with acute miliary tuberculosis; (3) pernicious anemia with melanoderma and vitiligo; (4) splenic anemia (splenectomy).

In the first case the giant cells were found in the lungs, liver, spleen, kidneys and lymph-glands. In the second case they occurred in the capillaries of the lungs and kidneys; in the case of pernicious anemia in the lungs and spleen. In the fourth case the spleen was removed three days before death and portions of the organ were taken at the time of the operation for microscopical examination. These show the presence in the blood-spaces of the pulp of many multinuclear and mononuclear giant cells. Sections of the lung and liver prepared from material taken at the autopsy three days after the splenectomy showed numerous capillary emboli of giant cells similar to those found in the spleen. While the giant cells in these four cases have not been as thoroughly studied as in the case of rupture of the liver, yet in all respects with the ordinary stains they appear to be identical with those found in that case and in the eclampsia specimens obtained from Schmorl's laboratory. From their morphological appearances it would be impossible to ascribe to them a different origin.

The question then arises as to the origin of these cells. In none of my cases can they be placental cells, and the bone-marrow, spleen or lymphatic-glands must be taken as the most probable source from which the metastasis arises. Lubarsch came to the conclusion that the giant cells found by him in the lung-capillaries in a case of resection of the hip-joint and in tuberculosis osteomyelitis were of bone-marrow origin; likewise Aschoff excluded other sources of origin for the giant cells observed by him in so many widely-varying affections. This view was also supported by Arnold. Finally, Maximow showed by experiments upon animals that not only single bone-marrow cells, but also portions of the marrow and osseous tissue could be set free by trauma and carried to the lungs. Lubarsch explained the metastasis in his cases by the setting-free of the cells from the marrow-matrix by the trauma caused by operations and also through destructive inflammations of the

bone and bone-marrow. Aschoff came to the conclusion that in his cases the metastasis was due, not to the effects of direct mechanical injury to the bones or to disturbances of blood-pressure, but to chemotaxis brought about by the appearance in the blood of substances causing an emigration of the giant cells from the marrow into the blood-stream. Since he found the giant cells in the pulmonary capillaries in a healthy individual dying suddenly from accidental causes, he came further to the opinion that there may be a physiological leucocytosis of the marrow-cells into the blood.

Arnold confirmed the metastasis of the bone-marrow cells as a result of injury to the bones, but found that it also took place in other conditions where mechanical force played no part, as in artificial dyspnea. He was led to believe that an emigration of these cells took place under certain conditions in which the cells may play the rôle of phagocytes. Maximow's experiments with animals were carried out for the definite purpose of settling the question as to the pathological or physiological nature of the metastasis of the giant cells of the marrow. He arrived at the conclusion that after direct injury to the bones both normal and degenerating bone-marrow giant cells appeared in the circulation, the latter in much greater numbers. He considered the absence of the cell-protoplasm from the nuclei of the giant cells found in the lung-capillaries as an evidence of degeneration, and not, as Aschoff thought, to be due to the slipping-off of the protoplasm as the cell was crowded into the narrow capillary. He further claims that normal giant cells of the marrow are never found in the lung capillaries of animals in whom no direct injury to the bone-marrow is produced, that in these cases only the degenerated forms appear, since these isolate themselves from the tissue of the marrow and pass into the marrow-capillaries whence they are carried out into the general circulation. Maximow found also that the number of these degenerating giant cells in the bone-marrow was greatly increased in the marrow of pregnant rabbits, and for this reason he explains the more frequent occurrence of their metastasis into the lungs of pregnant animals. Lubarsch in reply to Maximow affirms that marrow-cells may pass into the circulation without injury to the marrow; and that in all cases of liver-cell or placental-cell embolism there is a secondary embolism of marrow giant cells which greatly increases the difficulty of differential diagnosis. The differential points he does not give.

I cannot accept Maximow's conclusions in so far as the appearances in the human body are concerned. In all of my cases giant cells showing a well-preserved cell-body were found, and the nuclei of these cells showed the same staining properties as did those of the cells possessing no protoplasmic cell-body. No giant cells showing any advanced stage of degeneration or necrosis were found though careful search was made for them. Only in a few cells were small skeins of chromatin found projecting into the cell-protoplasm from the main body of the nucleus. In all of the cells the nuclei stain very deeply and uniformly and this with their size makes them very easily discoverable in a low-power examination.

That the cells in all of the cases were circulating in the blood at the time of death is shown by their presence in the blood in the larger vessels, the lumina of which they do not fill and where they are not entangled in thrombi. Further, the appearance in many of the small capillaries is more suggestive of ameboid movement than of the position which cells would assume if forcibly pushed into a narrow vessel. The irregular, knobbed nuclei are seen in straight capillaries as well as in winding ones; and further, in some of the larger capillaries elongated, budding nuclei are found possessing a distinct cell-body which does not entirely fill the lumen of the capillary. Red blood-cells and leucocytes lie between the capillary wall and the body of the giant cell, the former not showing the alterations of size and form which would result if the giant cell had been forced into the vessel with them. It is possible that such cells may have been dislodged backward by a retrograde current, but in that case it would seem probable that they would assume their original form. Arnold's observations showed that in the marrow the giant cells slowly changed their form and position, and it seems to me very probable that they show the same ameboid powers when in the lung capillaries.

The absence of cells showing any advanced stage of degeneration leads me to the opinion that the metastasis of these giant cells is in all of my cases either an agonal or pre-agonal leucocytosis, and is probably, as suggested by Aschoff and Arnold, chemotactic or phagocytic in its nature. Whether this pre-agonal emigration of the marrow-cells is a part of the pre-agonal leucocytosis observed in many cases I cannot say. In the only case in my possession where a pre-agonal leucocytosis was noted by the clinician (acute miliary tuberculosis) I have not been able to find any giant cells in the lung capillaries.

It is, of course, probable that under certain conditions, pregnancy, etc., the giant cells enter the circulation without any relation to the occurrence of death. From the findings in the cases of splenic anemia and pernicious anemia following epistaxis there is also the possibility that in these cases giant cells resembling bone-marrow cells may have been formed in the lymph-glands, liver or spleen, as well as in the bone-marrow and that they may bear an intimate relation to the regeneration of the red blood-corpuscles. It is my intention to pursue further the study of the giant cells found in these cases with reference to this question.

Summing up the results of the above study of my case and of the literature I arrive at the

following conclusions concerning the emboli of giant cells found in the pulmonary capillaries:

1. Mono- and multinuclear giant cells appear in the pulmonary vessels in a large variety of widely-varying pathological conditions. In some cases they also appear in the capillaries of the liver, spleen and kidneys.

2. The source of these cells may be either the placenta, bone-marrow, spleen, or lymphatic glands, but we have no means of absolutely determining such origin except in the cases where portions of villi or of marrow tissue are also found.

3. It is not possible with present staining methods to differentiate between single giant cells arising from the syncytium, periplacental tissue, bone-marrow, spleen or lymphatic glands.

4. It is probable that in the majority of cases the giant cells found in the lung-capillaries arise from the bone-marrow, and that in some conditions (pregnancy) the metastasis is physiological, while in others it may be of the nature of an agonal or pre-agonal leucocytosis. In other conditions it may be the result of diseased conditions in the bone-marrow itself. The exact significance of the process remains yet to be discovered, but it is probably of far greater importance than that of an accidental occurrence, as it has generally been considered.

From the study of my case it would also appear that the diagnosis of liver-cell emboli in the lungs is very difficult and practically impossible if pieces of liver-tissue showing distinct structure are not present. My material was taken from the body so soon after death that the changes found in the liver-cells can hardly be considered to be post-mortem, yet all of the liver-cells which were found loosened from their normal relations, either in the hepatic or lung-vessels, showed advanced cloudy swelling and necrosis, to such an extent that the free cells showed no characteristics which would differentiate them from other dead parenchymatous cells. It was only the finding of small portions of liver-tissue showing the liver rods and capillaries with endothelial nuclei still staining that led me finally to the diagnosis of liver-cell embolism. As mentioned above the necrosed cells found singly and in groups were regarded as liver-cells only from their general resemblances to the dead and dying liver-cells found in the larger masses. I should not have felt justified in calling them liver-cells had they alone been found.

It is worthy of note that the liver-cells in my case underwent such rapid death. This accords with all of my observations made upon liver-cells, to the effect that necrosis and degeneration quickly follow any disturbance of their normal relations; so it would be expected that transported liver-cells would quickly die, as was shown in this case. Yet Jürgens advanced the hypothesis and Klebs claimed that the free liver-cells in the blood-stream not only are preserved for a long time but that they may undergo a proliferation. The latter asserted that he found young liver-cells in the capillaries of the kidneys and adrenals. Both Schmorl and Lubarsch oppose this view and doubt the accuracy of Klebs' observations. Lubarsch believes that the loosened cells may be preserved for three weeks, as in one of his cases of eclampsia where death took place twenty days after the convulsion he found emboli showing living liver-cells. This does not prove, however, that the liver-cells had been out of their normal relations for this period of time. In other cases where death occurred five to six days after the attack the majority of the liver-cells showed advanced degenerative changes. In animal experiments the cells quickly necrose, and disappear after one day. Such an early death of liver-cells loosened from their normal relations is in accord with our general experience regarding the life-processes of parenchymatous cells, and I consider it to be most probable that in the human body as well as in the rabbit necrosis of such loosened cells follows almost immediately. Proliferation of such damaged cells cannot take place.

The manner of death of the transported liver-cells in my case was that of a cloudy swelling leading to a simple necrosis and liquefaction. Only in the cells of the larger groups where the necrosis was not so complete were small fat droplets present. As the normal cells of the liver contained no fat the process of fatty degeneration in this case is shown to be of a slower nature than the simple necrosis. In those cells dying quickly no fat is formed, but in the slowly dying ones minute fat droplets are formed. That the dead and dying liver-cells are apparently conducive to coagulation and thrombosis is shown by the fact that in all cases they lie in fibrin masses. This confirms the observations of Lubarsch and also bears out his conclusion that neither liver-cell embolism nor thrombosis of the pulmonary capillaries is the cause of the convulsions of eclampsia.

The absence of the fatty embolism in my case is also worthy of remark. Jürgens looked upon the fatty embolism found in eclampsia and delirium tremens as caused by the associated liver-cell embolism, but Schmorl found it in cases where the liver contained no fat. Maximow held it to be associated with marrow-cell metastasis, but it is not present in any one of my five cases where giant-cell emboli are found in the lung-capillaries. It is, therefore, not an essential accompaniment of either form of embolism.

Because of the difficulty in diagnosis of single necrosed liver-cells in the blood-vessels, I think that all cases where the diagnosis was made from such cells alone should be regarded as doubtful. This is especially true when the liver-cells are found in the hepatic vessels. Schmorl, Lubarsch and Leusden have already pointed out the danger of confusion with artefacts. In the cutting and handling of the liver at the autopsy liver-cells are easily displaced into the vessels, and I have many times observed the presence of

free cells in the vessels in sections taken from blocks cut deep in the tissue, and have always regarded these as artefacts. To my mind the guiding points given by Schmorl for the differential diagnosis between such artefacts and true metastasis of liver-cells into the hepatic vessels are not sufficient. The only safe guide is, I think, the presence of distinct liver lesions in which laceration of the liver lobules and rupture of the hepatic vessels occur. That metastasis of liver-cells occurs in the simple degenerative conditions of that organ observed in many cases of eclampsia, sepsis, acute infections, delirium tremens, etc., as reported by Turner, Jürgens, Klebs, Lubarsch, etc., I consider highly doubtful and believe that the cells seen in these cases were most probably artefacts. There can be but little doubt of this in Turner's and Klebs' cases.

Further, it is highly probable that many of the appearances in the pulmonary capillaries diagnosed as liver-cells were in reality bone-marrow cells. This is clearly shown in the descriptions given by Lubarsch. He found many masses of deeply-staining chromatin which he regarded as degenerating liver-cells. His description of these corresponds in all respects to the various appearances presented by the marrow giant cells. The dying liver-cell does not become hyperchromatic to the degree shown in tumor-cells as is thought to be the case by Lubarsch; there is invariably a gradual fading-out of the nucleus or a diffusion of finely-granular chromatin which also gradually loses its staining power. Lubarsch, himself, says that if placental cells are present as is the case in eclampsia, it is wholly impossible to differentiate between such degenerated liver-cells and placental cells. I have seen no appearances which would make me believe that dying liver-cells ever come in the least to resemble the hyperchromatic giant cells of the placenta or bone-marrow, and I am forced to believe that the cells described by Lubarsch were not liver-cells but either one or the other of the two kinds of giant cells. To my mind also Lubarsch's statement bears out my view of the confusion attending the differential diagnosis of these cells. Further, no processes of coagulation are seen about these deeply-staining masses of chromatin as are in every case found about the dying liver-cells; and this, I think, may be taken as evidence that they do not represent degenerating cells.

In cases of traumatic injury to the liver in which death takes place within a few hours the presence in the lung-vessels of definite portions of liver-tissue put the diagnosis above all question. Such cases are those described by Schmorl, v. Zenker and Hess.

In conclusion, the aim of this paper has been to point out the confusion which exists in the recognition of the giant cells found in the pulmonary vessels, and the fact that at present there are no means of differential diagnosis as to whether these cells are of placental, spleen or bone-marrow origin, and that the significance of such metastasis needs to be cleared up by further investigations. It is my intention to pursue further with reference to these questions the study of the four cases mentioned above.

My thanks are due Dr. Schmorl of Dresden for his kindness in giving me access to the eclampsia material while working in his laboratory as volunteer assistant.

Note.—Specimens of the above case were sent to Dr. Schmorl for examination. In reply he states that he cannot with certainty consider the giant cells in the pulmonary capillaries to be identical with placental cells. Dr. Schmorl has further with great kindness written me fully as to his present point of view concerning the differential diagnosis of these cells. In short, this is as follows: *The placental cell must possess a definite protoplasmic body in which numerous nuclei lie isolated without connecting bands of chromatin. In the narrowest pulmonary capillaries these cells cannot be differentiated from other giant cells; therefore, search should be made for them in the larger capillaries and small arterioles.*

As seen from my drawing and from the description given above cells corresponding in every way to these requirements were found in my case, but were very rare in comparison to the number of mononuclear forms.

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POST-APOPLECTIC TEMPERATURE AND DISTURBANCES OF THE ALIMENTARY TRACT: THEIR MANAGEMENT.

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The cerebral lesions included in the term apoplexy, hemorrhage, embolism and thrombosis, may all be followed by variations in temperature and certain disturbances of the alimentary tract. It is after cerebral hemorrhage that such temperature disturbances are most common and of the greatest range of variation. Those apoplexies affecting the motor area of the cerebrum and followed by more or less complete hemiplegia being most frequent and, in the majority of cases, resulting in the greatest implica-

tion of destruction of tissue, have afforded me more opportunity for observing temperature changes and alimentary disturbances than lesions outside of that area. The rare conditions of amnesia of organic origin dependent upon implication of large cortical areas, and the more common, yet still rare, states of aphasia unaccompanied by motor paralysis of the extremities may also be followed by variations in temperature.

It is usual to find immediately following the cerebral hemorrhage, during the coma, if the lesion has been of sufficient severity to produce a comatose condition, a slightly subnormal temperature; usually from 97.5° to 98° F. After the lapse of a longer or shorter interval of time, a period frequently coinciding with the passage of coma and the resumption of the conscious state, a gradual rise of temperature, up to perhaps 101° F. or even higher, develops. At this stage the temperature, taken in the axilla, is frequently from one to two degrees higher on the paralyzed than on the unaffected side. In those patients who progress favorably the temperature gradually subsides (in about twenty-four hours), although the temperature of the affected side usually remains somewhat higher than that of the opposite side for some days. Subsequently the paralyzed side becomes markedly colder than the well side, a condition which is constantly attendant upon the hemiplegic state.

The accident of infection of the cerebral lesion and the establishment of cerebritis or of localized suppurative areas is fortunately rare, occurring only when trauma or other accident has opened a channel for the entrance of bacteria or where an infected embolus is carried to the brain from already existing foci of disease in other parts of the body. In the latter instance the temperature resulting from the already existing disease is accelerated by the cerebral implication.

Where the lesion is a hemorrhage of large size with continuous coma the temperature frequently rises to 103° F., or even higher. In such instances the temperature rise is coincident with extension of the hemorrhage into the lateral ventricle. Such an extension is followed by fatal results, the patient continuing comatose and the temperature rising until death occurs. Thus continued high temperature is ascribed to one or more of these conditions. From my observations I am led to believe that a continued high temperature, at times irregular in its fluctuations, may be dependent entirely upon the absorption of infective material in the alimentary canal. As the temperature is sometimes the only guide to the condition, the possession of an absolutely harmless and rapidly acting therapeutic agent is of great value as an aid to differential diagnosis. We have such an agent in hydrogen dioxide.

Various disturbances of the digestive organs, usually of a fermentative type, dependent upon a lack of tone of the alimentary tract, occur frequently after cerebral apoplexy. These conditions are often slight and at times absent, as far as we may judge. They are distressing, and at times dangerous conditions calling for active interference not uncommonly arise. In those patients in whom no active alimentary disturbance occurs we find almost constantly a condition which may be described as alimentary torpidity.

Heretofore it has been customary to meet the symptoms arising from fermentative changes with, preferably, small doses of calomel. This drug is sometimes contraindicated and its continued exhibition is very apt to result unfortunately. Other intestinal and stomachic disinfectants have been used with varying results, and no one in particular appears to meet the requirements with any constancy.

Hydrogen dioxide does, however, not only take the place of calomel but seems to be much more effective. Its administration, provided it is pure, is attended by no bad results and its action is rapid. It can be repeated as frequently as necessity requires. In addition to its action upon fermentation it appears to have a slightly stimulating effect upon the digestive functions. I believe that it hastens stomachic digestion, but of this I am not certain. It does, however, overcome the conditions which I have described above as alimentary torpidity.

After the administration of hydrogen dioxide in the first case in which I used it, I found that it not only improved the condition of the alimentary tract, but that the temperature subsided. Within five hours the temperature declined from 101° to 100° F. At the time I was under the impression that this was merely a coincidence, but a similar effect in subsequent cases convinced me that the decline was effected by the medication. Subsequently the occurrence of two cases in which the administration of this agent was followed by a rapid decline of the temperature of the paralyzed side with a slower decline of that on the unaffected side, opened up a field of speculation as to the *modus operandi* of hydrogen dioxide on the economy, acting through the intestinal tract, and also the reason for the presence of temperature changes after apoplexy.

In my first patient the lesion was probably an embolism in the left internal capsule, including the arm and leg fibers. The temperature in the right axilla four hours after the "stroke" and one-half hour after the return of consciousness was 100.6° F., and in the left 99.4° F. Hydrogen dioxide was given, one dram repeated every hour. At the expiration of five hours the temperature in the left axilla was 99° F.; in the right, 99.6° F. This showed a decline of 1° F. on the paralyzed side and only .4° F. on the unaffected side.

The second case was one of hemorrhage into the right internal capsule, producing complete left hemiplegia. The loss of consciousness in

this case extended over a period of twelve hours. The temperature remained subnormal for several hours when it began to rise, continuing rapidly up to 102.2° F. in the left axilla and 101° F. in the right. Owing to difficulty in getting the patient to swallow, hydrogen dioxide was not administered until several (about five) hours afterward, about twenty hours after the "stroke." The axillary temperature then was 101.6° F. left, 100.2° F. right. Dram doses of this remedy were then given, repeated every half hour and the patient's pulse watched closely. This was continued for three hours, and during that time the pulse remained practically unchanged. The axillary temperature then was, left 100.4° F., right 99.8° F. It will be observed that in these two cases the temperature was not only reduced, but the reduction was more rapid on the affected side than on the well side. In all of the other cases the temperature was reduced, but always equally.

The effects of the hydrogen dioxide seem to demonstrate positively that the temperature following the apoplectic "stroke" is due in part to the absorption of septic material in the alimentary canal. The two cases in which the temperature on the affected side fell more rapidly than that of the opposite side pointed to the probability of the temperature being due in part at least to vasomotor disturbances. If this were the case and if the hydrogen dioxide had produced any vasomotor effect the conditions could be demonstrated experimentally. Two similar experiments were made at different times upon the same individual. The subject, a healthy man, inserted his arm in the plethysmograph and a reading was taken. Hydrogen dioxide was then administered, but without any change in the position of the recording column of water. The same results followed the second trial.

I conclude, therefore, that the more rapid fall in the temperature of the paralyzed side was not due to any vasomotor effects of the hydrogen dioxide, but to the fact that with the resumption of more nearly normal conditions of the intestinal tract the circulation also became more perfectly adjusted and the heat was more rapidly lost. In other words the fall in temperature was merely just what we should expect with the resumption of general functional activity.

Therapeutically hydrogen dioxide is an agent which acts well in the alimentary disturbance above mentioned. The reduction of temperature is coincident upon the effects of hydrogen dioxide upon the alimentary conditions. It has been my practice to give the drug combined with an equal quantity of chemically pure glycerin.

1 Madison Avenue.

MEDICAL PROGRESS.

Albuminous Food in Disease.—The carefully written article of J. Flesch (*Klin. therap. Woch.*, August 19, 1900) is a valuable addition to the already extensive literature on artificially prepared proteids for the sick-room. The author first shows that all attempts to entirely prevent loss of weight in febrile and cachectic states will ever prove futile since emaciation is a cardinal symptoms of these conditions, caused no less by the anorexia, disturbances of the digestive tract and the sensorium than by the pathological process itself. A fluid diet is always to be preferred, since the temperature of the fluid can be better controlled and since the toxins are more readily thus washed out of the kidneys. The value of milk lies in the fact that it contains all of the three great classes of foodstuffs, the amount of any one of which can be increased to suit special indications. Thus, milk may be made richer in fat by adding cream or by the use of Gaertner's "Fettmilch," which, however, is often not palatable to the patient; the percentage of carbohydrates can be raised by the addition of milk-sugar, and many of the newer albuminous preparations are available for making it more highly nitrogenous. The simplest procedure for the latter purpose would be to boil down the milk or to add an egg, but to both there are objections. The addition of tropon, sanatogen, sanose, eucasin, somatose or nutrose, the author does not recommend, since the organism does not sufficiently utilize them. Moreover, tropon and sanose have the disadvantage of being insoluble and eucasin and nutrose of having a disagreeable taste. Such faults cannot, however, be found with plasmon, an albuminous body obtained from skimmed milk mechanically by the addition of bicarbonate of sodium, for it agrees perfectly with the patients, increases the consistency of the stools and reduces the loss of weight to a minimum. An important point in its administration is to change the vehicle as much as possible, and the fact that plasmon may be given with almost any food readily permits this. In case plasmon should cause constipation, the addition of milk-sugar is to be considered.

Os Magnum and Wrist-Joint Tuberculosis.—D. E. Mundell (*Annals of Surgery*, August, 1900) considers the os magnum, because of its anatomical relations to adjacent bones, being the pivotal, central and main bone of the wrist, with its seven articulations, most likely to receive the effects of traumata to the wrist bones, especially sprains. Tubercle bacilli manifest themselves in bone by a process of rarefaction. Repeated strains on any bone may favor tuberculosis on account of minute foci of inflammation resulting from the "jarring" of the trabeculæ. As the os magnum is so situated as to receive the effects of injuries from three metacarpal bones, as it performs more movements in flexion and extension than the other bones, and as in their movements greater strain is thrown on it than on the other carpal bones, from the numerous ligaments connected with it and resisting such movements, we have in part an explanation of the os

magnum being so often the principal seat of tuberculosis wrist-joint disease.

Pulmonary Tuberculosis.—Of the different preparations of guaiacol C. J. Whalen (*Medicine*, September, 1900) always had most success with the liquid form given in five-minim capsules after each meal, and increased one drop each day until saturation of the patient. At the same time guaiacol is applied externally, sometimes with marked effect on the cough and fever. If the stomach does not tolerate guaiacol, oil of cloves internally and guaiacol externally may be given. Other excellent remedies are iodine, strychnine and arsenic phosphorus, cod-liver oil and the malt liquors. One of the most pleasant and easily assimilated preparations is red bone-marrow. The diet should be nutritious, chiefly meat, milk, eggs, farinaceous food, and butter. Raw eggs may be taken with great advantage even to the number of two dozen a day. Among inhalations, formalin in two- to twenty-five-per-cent. strength, and inhaled for fifteen minutes twice a day is by far the best. Iodine, carbolic acid, creosote, the oils of white pine, cinnamon, and cloves, and eucalyptol and thymol are also of value. There should be moderate exercise without fatigue, and lung gymnastics such as deep breathing, daily cold applications to the chest and vigorous friction. The diarrhea may be controlled by 40 to 100 grains a day of bismuth, or in extreme cases with acetate of lead and opium. The night-sweats succumb to 1/120 to 1/60 grain of atropine at bedtime, or to 1/6 grain of agaricin. Where these fail ten-grain doses of sulfonal or cold sponging may be of benefit. Hemoptysis as a rule requires no treatment. If, however, there is much restlessness and cough morphine may be administered. The blood-pressure may be lessened by recumbency, saline cathartics, diuretics, and counterirritation. If these measures do not sufficiently lower the arterial tension, aconite, one minim every hour, or veratrum viride, or 1/100 grain of nitroglycerin may be of value. The author believes that tuberculin has no curative power, and his results with the intrapleural injection of nitrogen have been disappointing. In many cases a change of climate is advisable, but not when the patient is likely to suffer from homesickness or be denied the comforts of home. Persons with weak constitutions should never be sent to high altitudes, but should be directed to warm, sheltered places; those with strong constitutions do best in a mountain climate, no degree of cold is contraindicated, providing the altitude is suitable for the stage of the disease. In high altitudes the freedom from bacteria lessens the danger of secondary mixed infection, and the rarefaction of the air brings into use a large portion of the lungs which is not used at a lower level.

Typhoid Fever.—C. H. Andersen (*Medicine*, September, 1900) outlines as follows his treatment of eighty-seven typhoid patients at Fortress Monroe. The patients being in tents and the attendants unskilled, cold baths were not attempted, but a lukewarm bath was given each morning. The bowels were regulated by calomel in two-grain doses two or three times a week if necessary. Two ounces of milk was given every two hours and two ounces of water in the intervening hours, 1/60 grain of strychnine nitrate three times a day, and brandy every four hours or oftener according to the pulse; up to eighteen ounces in twenty-four hours. The milk was gradually increased up to five or six ounces every two hours unless undigested milk appeared in the stool. Peptonized milk was substituted in irritable stomachs. In the third week of convalescence soft-boiled eggs, eggs and milk, ice cream, and soft milk-toast were allowed. Where milk was not well borne a proprietary food was used, and this, mixed with hot water, was also especially useful in irritation of the intestines and diarrhea. Among all these cases there were only five relapses. Hemorrhage occurred in seven cases, and five of these were infused with normal salt solution with happy results.

Milk for Infants of the Poor.—During the past summer attempts have been made, especially in Chicago, to find a food for poor infants which might be superior to sterilized or pasteurized milk. It is believed that sterilization greatly deteriorates the food value of milk, causing (1) coagulation of the albumen and consequent difficulty in digestion, (2) loss of the emulsion of the fats, (3) change of sugars to caramel, (4) splitting up of lecithin and nuclein and change in the soluble salts. Pasteurization does not alter the milk so markedly, but is also admitted by many reliable authorities to be a necessary evil. G. F. Palmer (*N. Y. Med. Jour.*, September 8, 1900) urges that no amount of heating can purify a foul milk for the toxins and bacterial products are extremely resistant, and hence a comparatively clean milk is absolutely essential to infant feeding. If one can be sure of reasonably pure milk the advantages of modified raw milk must be admitted. The author first made sure of a good supply of clean certified milk and then modified it according to the rules usually given by the addition of cream and milk sugar. He, however, began with rather larger percentages of proteids and decreased as the age of the infant increased in imitation of normal lactation. The food was packed in sterile jars and placed in large buckets of ice in which it was carried home. These methods were carried out at a diet kitchen in Chicago, and although 700 applications for food and medical care have been made during the summer only three deaths have occurred. The purity of the milk is vastly more important than the degree or character of the modification, and it is therefore incumbent on charitable institutions for children, or better, upon the city government, to insist upon a pure certified milk supply.

Treatment of Gastroenteric Infection of Chil-

dren.—Since the chief cause of gastroenteritis is infection, the primary indication is to empty the intestinal tract of all food and bacteria. Nature attempts this by regurgitation and vomiting of food taken and by causing a serous diarrhea. M. E. Fitch (*Med. Times,* September, 1900) gives small doses of calomel every half hour till there is a yellow stool. Irrigation of the bowel is also at once performed. A gallon of warm sterile water is used, if much mucus is present, adding a little sodium bicarbonate. The temperature should be from 100° F. to 110° F. and the bag held about three feet above the child. The catheter should be inserted as far as possible and the flow continued until it returns clear. In prolonged cases a cool fluid such as one-half-per-cent. lysol or thymol may be used and is often strikingly successful. The feeding of the child is extremely important. In the acute stage milk should be avoided. The white of an egg beaten up in cool water and sweetened with sugar of milk is good. Later sterilized albuminized food, as broths, can be given in small doses with the white of egg. Sterile water should be given *ad libitum.* Antipyretic drugs should not be used. Cold applications to the abdomen are grateful, but a piece of flannel should protect the skin. In the chronic cases, the prognosis is not good. The bowels must be kept clean. Stomach and intestinal lavage are important and inunctions of olive oil with a little alcohol or chloroform are helpful. Fowler's solution and creosote are used internally.

New Physical Sign in Heart Dislocation.—Acute or chronic dilatation of the stomach is frequently the cause of so much dislocation in the position of the heart, says A. Abrams (*Med. Rec.,* September 8, 1900), that severe dyspnea, asthmatic attacks and even pseudo-angina may result. He calls this difficult breathing sequential to gastric dilatation, gastrectatic dyspnea. Many sufferers from this form of dyspnea make no mention of dyspeptic symptoms, the latter being masked by pressure signs, but the condition is relieved by treatment of the stomach alone. Their distress is sudden in origin, attended by a feeling of weight and pressure in the precordial region and eructations of gas usually mark the relief of the paroxysm. It is believed that these attacks are due to the pressure upward of the heart by a dilated stomach. A case is mentioned in which the patient could voluntarily, by buccal insufflation of the stomach, completely obliterate the cardiac dulness. In the cases above mentioned there was also a decrease in the cardiac dulness with correspondingly enfeebled heart sounds, bearing a distinct relation to the severity of the pressure symptoms. Ferber's sign to detect a dilated stomach was that the tympanitic percussion note found in Traube's space, formed by the stomach beneath the lower border of the left lung, gradually disappears behind the axillary line if the stomach is normal, but may be traced to the vertebral column when the stomach is much dilated. This is not considered very reliable, for the spleen usually interferes with the percussion note of the stomach in that area, especially if the spleen is displaced or enlarged. The author has found that when the heart is dislocated upward by a dilated stomach a patch of dulness and even flatness may be detected in the interscapular region on the left side, about midway between the vertebral column and the internal border of the scapula. The dull area may vary from the size of a dollar to that of nearly the whole interscapular region. It disappears when the patient leans forward, reappears on assuming the erect position and is increased by leaning backward. Bronchial respiration is also heard over the dull area, but ceases when the patient leans forward. The dulness is due to compression of the lung and can be demonstrated by inflating the stomach.

Gastroenterostomy and Gastric Function.—The operation of gastroenterostomy is usually one of necessity to relieve a pyloric obstruction, a perforation or a hemorrhage and the subsequent secretory functions are usually of secondary importance. It is seldom that opportunities are allowed for studying the functions of the stomach for any length of time before such an operation, and then continue the observations subsequently to detect the results upon the gastric functions. C. S. Fisher (*Med. Rec.,* September 8, 1900) has reported four cases coming under his care which were operated upon by Dr. R. F. Weir. Detailed examinations were made of all cases for several months before and after operation. One case was that of a benign pyloric stenosis with dilatation. The principal symptom was an intense, spasmodic and remittent pain. Repeated examinations showed a hyperacidity, an impaired motility and considerable dilatation. After operation the case was followed for fourteen months and the results show that the pain had been entirely relieved, the dilatation diminished, the motility was still impaired and the hyperacidity had increased. Another case of benign pyloric stenosis in which there was a gradual increase in the acidity previous to operation with severe symptoms and marked diminution in motility, made a good recovery after the operation, his nutrition improved, the pain ceased, but the hyperacidity seemed to continue to increase. The size of the stomach was markedly reduced. A third case of hyperacidity which caused a pyloric spasm and moderate dilatation was followed for some time with increasing symptoms and an operation of expediency advised. For six weeks after the operation the hydrochloric acid remained normal. Then as a result of mental distress it increased temporarily, but the symptoms never returned. A fourth case of dilatation of stomach without pyloric obstruction and with movable kidney is reported. She was under observation for about four years previous to the operation, and during that time there was a slow gradual diminution in the hydrochloric acid secretion,

there was marked atony and large quantities of fermenting material always present. After the operation the patient began to regain flesh, her pains disappeared and except for occasional attacks of fermentation she has been well since (one year). Notwithstanding the evident improvement in her physical condition the degeneration of the glandular structures of the stomach have continued for there is now no free hydrochloric acid present. The size and position of the stomach remain about the same, but the motility has apparently improved. It thus seems that when the stomach wall has been the seat of a chronic irritation leading to the hypertrophy or atrophy of the glandular structures, an operation which relieves the obstruction will not influence this chronic inflammation which continues. Symptoms do not return, for the immediate cause of distress has been removed, and either hyperacidity or subacidity can exist in stomachs without giving any subjective symptoms. Freedom from symptoms in cases of subacidity depends entirely on the activity of the muscular wall. Furthermore, it seems that the stomach returns to a normal condition of size and motility in cases in which these disturbances were due to obstruction. The regulation of the intestines is one of the best results obtained by gastroenterostomy. These cases are representative of a type in which the operation is not one of necessity but expediency, and hence it is all the more important for the physicians to know what improvements in the symptoms and conditions can be offered the patient.

Treatment of Hemoptysis.—J. E. Frazer (*Therapeutic Gazette*, August, 1900) outlines the treatment for pulmonary hemoptysis in vogue in his practice. The basis of treatment rests on the principle of reducing the intravascular pressure at the site of the hemorrhage. This may be done in two ways: (1) By acting on the heart-beat, the primary origin of all blood-pressures; (2) by acting on the vascular approaches to the wounded vessel. Morphine acts better than any other drug to slow both the number and force of the full and rapid, bounding pulse-beats. Contraction of the vascular channels in front of the lesion is well brought about by ergot. Ergot is allowable, however, only when the bleeding is from vein or small arteriole. In fact, the use of ergot is very often rendered unnecessary as morphine alone is quite sufficient to stop the bleeding. Besides, as unstriped muscle is easily fatigued, it would not be possible to continue the use of the ergot for a long while. The author administers half a grain of morphine hypodermatically—never less than a quarter of a grain, for these patients are very tolerant. Hemorrhage having ceased, the most important point in the whole treatment is to prevent recurrence. An important point to remember in this connection is that after a certain interval the heart will pull itself together and beat with increasing speed and power causing the hemorrhage to recur. Therefore it is necessary to keep the pressure constantly at or below the point at which the hemorrhage ceased. This, of course, means constant supervision, using morphine supplemented by ergot when necessary. The injections may be repeated every two, three, four or six hours as indicated and the interval between them can gradually be increased after the first day or so. Drugs per os give very discouraging results, as they do not seem to be properly absorbed. Chloride of calcium has been used occasionally with success in patients whose blood showed a lack of clotting power. In the great majority of cases, however, it is unnecessary. As for additional means of treatment, rest in bed is a necessity. Too little time is usually allowed for this. In a minor hemorrhage in which but a few ounces of blood are lost, at least five to seven days ought to be spent in bed. For severe hemorrhage, fully several weeks are necessary for the ill effects of the bleeding to be tided over. The diet should be light and cold. The use of purgatives is a mooted question. Where the bleeding has been slight, with no immediate prospect of recurrence for some hours at least, a saline aperient at the commencement is useful; but where the heart's action is excited, this should be strictly interdicted. The action of speaking may usually be disregarded. Cough, if troublesome, may yield to regular doses of chloral or codeine. Pain in the chest generally yields to counterirritation. Pain in the abdomen, if muscular in character, quickly succumbs to firm cross-strapping; if internal, it is probably due to intestinal gout, as described by Haig, and yields readily to sodium salicylate. This condition seems to be due to the injection of morphine. Vomiting seldom takes place, but should it be present and severe, it will be relieved by one-twelfth grain of cocaine. Antimony and ipecac, being too depressing, must never be used. Should the bleeding be arterial the treatment differs in that ergot is inadmissible. In bad cases with high blood-pressure there is small chance of success. When morphine seems to have had but slight or transient action in slowing the heart-beat, aconite has frequently given good results. The ice-bag causes slight effect in slowing the beat and is hardly worth the discomfort it causes. Digitalis may be of use in very mild cases, but has no advantage over morphine in slowing the heart. The minor, impure hemorrhages, in which the sputum is slightly stained with blood and pain and oppression in the chest are felt, are improved by a sharp, saline purge followed by a few doses of ergot.

Syphilis and Diabetes.—Alfred Fournier (*Bull. de l'Acad. de Méd.*, August 20, 1900) reports the case of a girl with syphilitic father attacked at the age of six weeks with a persistent coryza, papulo-erosive syphilides on anus and genitals, and ulcerations in the mouth. Antisyphilitic treatment resulted in a cure, but when seven years of age the girl suffered from a marked

diabetes. All ordinary treatment was of no avail, but the diabetes was promptly cured under specific treatment.

Abdominal Hysterectomy for Ovarian Tumors.—Quenu and Longuet (*Revue de Chirurgie*, July, 1900) narrate the history of nine cases, of which the following one is typical. A woman, aged forty-eight years, whose previous uterine history as to menstruation and childbirth was normal until one year ago, when abdominal swelling was noticed. Examination revealed cystic tumors of both ovaries, the right hand one occupying the abdominal cavity as high as the umbilicus, the left one occupying the iliac fossa, the uterus was displaced downward and backward. The diagnosis of bilateral cystic tumor of the ovary having been made, a hysterectomy with bilateral ovariectomy was done, after the removal of ascites; the tumor was found to consist of multiple papillomatous vegetations involving the large mesentery, the pelvis, and the uterus; the removal of the entire mass which was difficult to accomplish, was followed by a perfect convalescence. With this case and eight similar ones, all successfully operated on, as texts, they draw the following deductions: That total abdominal castration for neoplasms of the uterine adnexa is justifiable, the gravity of the operation being less than usually believed, the mortality in their experience being *nil*. That this procedure has great technical advantages over other methods; the facility with which the ovarian cysts are first isolated and removed, and all adjacent adhesions broken up, being among the prominent advantages; moreover, post-operative accidents, such as intestinal occlusion, are thereby obviated, with a greater guarantee of absolute cure. The indications for total abdominal castration are as follows: (1) Cysts and tumors of the ovaries complicated by inflammation of the uterus, peri-uteritis and salpingitis. (2) Cysts and tumors of the ovary with a uterine involvement. (3) In bilateral cysts and tumors of the ovary, where owing to the size of tumor, or its involvement of adjacent tissue, it is impossible to separate readily the mass from the uterus. The operation is contraindicated when the ovarian tumor is unilateral and occurs in a young woman; when the uterine tissue is not involved; and when one can secure the proper enucleation of the ovarian mass by less heroic measures.

Alcohol a Poison Not a Food.—The therapeutic value of alcohol has long been a matter of dispute between clinician and theorist. Usually it is the former who poses as its advocate, but Kassowitz (*Deutsche med. Woch.*, August 9-16-23, 1900) comes to the fore with a sweeping denunciation of its use and affirms that for a period of ten years he has administered none of it in his practice. Having formerly been in the habit of giving it freely, he considers himself qualified to draw conclusions and is of the opinion that it deserves no place in the therapeutic list. It is useless as a food for it is essentially a protoplasmic poison and therefore incapable of entering into combination in the body, while the belief that through its oxidation it is capable of effecting economy of the body's fat or albumin stores rests on an error of observation. It is true that on an alcohol diet less nitrogen is excreted, but this does not mean that a saving of the body tissues is going on, the fact is simply that owing to its destructive action the alcohol inhibits metabolism, the damaged protoplasm being less able to take part in the vital processes, while at the same time through its benumbing the higher centers the organs innervated by them are less able to functionate normally and oxidation is less active. In view of the numerous other antipyretics and stimulants at command, there seems no valid reason for employing an agent like this, the deleterious action of which on the heart muscle, kidneys, liver, arteries and nervous system is so universally admitted. As a true fuel-saver in febrile and asthenic states, sugar, which may be readily administered in the form of fruit juices, ices, sweetened lemonades, etc., answers every requirement and experiments with the ergograph have shown that after its absorption a rapid and very noteworthy improvement in muscular vigor and tone takes place which of course includes the heart action. As a stimulant camphor surpasses alcohol in its promptness of action and the complete absence of all disagreeable by-effects. It will be a real advance when it is universally recognized that no substance can play the double rôle of foodstuff and poison and that only toxic and never nutritive properties are to be ascribed to alcohol.

Roentgen-Ray Therapeutics.—As the applicability of the Röntgen-rays is being extended from the field of diagnosis alone to that of treatment, new factors in their activity are being recognized. Sträter (*Deutsche med. Woch.*, August 23, 1900) calls attention to the fact that in addition to the intensity of illumination produced, the penetrating power of the rays is of importance. This depends on the nature of the tube used, and he proposes a terminology by which this faculty may be arbitrarily expressed. Soft tubes are those the rays of which are principally absorbed by the skin and muscle, while those able to penetrate down to and through the bone are to be denominated as hard. These characteristics may be recognized by the nature of the shadow of the hand, for instance, thrown on the fluorescent screen. With a soft tube the outline of the soft parts is very distinct, but with increasing hardness it becomes fainter and even the bones are so brilliantly illuminated as to be less plainly visible. In illustration of the importance of the recognition of this variation in penetrating power of different tubes, the author cites a case of psoriasis treated by the rays. The lesion on one arm was completely cured by five applications with a soft tube, while that on the other was entirely unaffected by similar treatment with a hard one.

Empyema of Highmore's Antrum.—M. Halle (*Berl. klin. Woch.*, August 27, 1900) in reviewing the different methods of opening the antrum in suppurative disease says that many disadvantages adhere to the customary procedure. In draining by the way of the canine fossa it is true that the cavity is opened at its lowest point, yet cures in less than six months are rare, due no doubt to the communication with the mouth, which allows of constant reinfection with the numerous bacteria of the buccal mucous membrane. The continuous pressure of pus or of iodoform gauze in the mouth soon becomes very disagreeable to the patient. The same objections may be urged where an alveolar socket is chosen for the outlet of the secretion. The author recommends the following procedure: The mucous membrane of the lower nasal chamber on the diseased side is cocainized. A special trocar is then introduced close to the septum and allowed to pierce the outer wall close above the floor of the nose. Irrigations with boric acid solution to be followed by insufflations of iodoform are then used, at first daily, later at longer intervals. The advantages of this method can be summed up as follows: (1) The operation is simple, rapid, and does not demand an anesthetic. (2) An abnormal communication with the mouth is not made. (3) The patients are not troubled with the taste of iodoform. (4) A rapid and complete cure is assured.

Heroin in Whooping Cough and Phthisis.—After describing the chemical characteristics of heroin M. Loewenthal (*Phila. Med. Jour.*, September 8, 1900) reports in detail 13 cases in which he has used the drug. Three of the cases were of pulmonary tuberculosis and ten of them were of whooping cough. In the cases of tuberculosis the heroin was given in doses varying from 1/8 gr. t. i. d. to 1/30 gr. b. i. d. according to the action of the drug on the patient. Two of the three cases of tuberculosis improved in every way. The patients' cough diminished until practically absent, they slept better, and gained in weight. Expectoration ceased and appetite increased. Their temperature came down to normal. The duration of the treatment in these two cases was three weeks. The third case of tuberculosis improved some at first but soon got worse and died. The ten cases of whooping cough in which the writer used heroin ranged in age from eleven months to eight years. In several of the cases all other remedies had been tried in order to relieve the paroxysms of coughing without result. Heroin was used in doses of from gr. 1/125 to gr. 1/75 every three or four hours, the size of the dose being varied according to the age and the condition of the patient. In one or two patients heroin hydrochlorid was used hypodermatically. The results were all that could be expected in most of the cases, as there was relief from the paroxysms of coughing and the patients were able to sleep well. There were, however, two cases of the ten in which the drug did not act well, in fact, had no effect whatever. In one of these cases heroin seemed to aggravate the disease and also caused a pruritus of the anus. The duration of the treatment with heroin in these patients varied from ten days to three weeks. Loewenthal considers heroin to be superior to anything else we have in the treatment of whooping cough.

Rules in Kidney Operations.—M. Mankiewicz (*Berl. klin. Woch.*, August 27, 1900) advises conservatism in all surgical interference for kidney disease and, in case of nephrectomy, recommends extreme care in ascertaining a normal function of the remaining organ. The best way to ascertain whether or not a kidney is functionating properly is to cause an artificial glycosuria by the administration of 5 milligrams of phloridzin and then to collect the urine by ureteral catheterization. In case of disease it has been found that but little or no sugar will be secreted from the affected organ.

Bacillus Coli in Drinking-Water.—The presence of this germ in water is an undeniable evidence of sewage pollution and it may be found when the contamination is so slight that it cannot be appreciated by chemical tests. In an examination of 509 specimens J. H. Linsley and B. H. Stone (*Med. Rec.*, September 1, 1900) found the germ in seventy-eight, only thirty-one of which were condemned by chemical findings. The presence of the colon bacillus indicates that the contamination is of comparatively recent date and that it probably came from the surface. The search for the typhoid bacillus in water is carried on with much difficulty and results are very uncertain, but if there are no colon bacilli it can at least be said that the typhoid germ is absent. In a number of towns where typhoid fever has broken out no typhoid bacilli were found in the water-supply; it was, however, infected with colon bacilli. The authors conclude that waters in which the bacilli coli communis are found to exist for any length of time are dangerous.

Conjoined Tendon and Cure of Hernia.—J. A. Blake (*Med. Rec.*, September 1, 1900) claims as a result of numerous observations on the cadaver that the conjoined tendon (which is usually understood to be the insertion of the lower fibers of the internal oblique and transversalis muscles, extending along the ilio-pectoral line laterally for a variable distance from the rectus insertion) does not extend for more than five-eighths of an inch laterally from the insertion of the rectus; in the majority, the extent was less than half an inch; in some subjects its extent was inappreciable; and in all cases it consisted of only scattered muscular or tendinous fibers. The true conjoined tendon is ordinarily such a weak affair that it is negligible in operative procedures; it is only exceptionally that either it or the transversalis is included in the sutures in the Bassini operation, excepting

that the sutures placed in the neighborhood of the internal ring may include the transversalis. The main reliance in radical cure is in the internal oblique, and efforts should be made to restore the parallelism of its fibers to Poupart's ligament; this may be done in nearly all cases by separating the internal for a short distance upward from the transversalis fascia and the transversalis fascia and the transversalis aponeurosis, and then, thus having loosened it, it may be drawn down by the sutures to Poupart's ligament. As a rule it is futile to attempt to draw down the transversalis aponeurosis, since this structure is normally deficient for a considerable distance above the ligament.

Collecting Urine from Ureters.—M. L. Harris (*Annals of Surgery*, August, 1900) states that only two methods are valuable, *viz.*, ureteral catheterization and the use of the urine segregator. There are three prerequisites for the successful catheterization of the ureters: (1) An unobstructed urethra of sufficient size to permit the introduction of the instrument; (2) the bladder must have a capacity and tolerance for 120 to 150 cc. of fluid; (3) the fluid must remain transparent a sufficient length of time to permit the catheter to be introduced. These conditions apply equally to all uretero-cystoscopes; to the Kelly method, which is applicable only in the female, conditions 2 and 3 do not apply. The disadvantages of catheterization are that bladder capacity and bladder tolerance differ: that it is not always possible to keep the fluid in the bladder clear enough to permit the passage of sufficient light for distinct vision, the transparency of fluid often being interfered with by blood and pus; that sometimes it is impossible to catheterize the ureters; that the catheter may become choked up; and, finally, that infection may be carried to a previously healthy ureter and kidney despite all caution. To prevent bleeding in the use of the catheter it is advisable to first inject into the bladder fifty to sixty cc. of a five-per-cent. solution of suprarenal extract, allowing it to remain ten minutes; this is washed out and followed by fifteen to twenty cc. of a two-per-cent. solution of cocaine, which is allowed to remain about six minutes; if spasm of the bladder exists, from any cause, precede the above method by injecting the following into the rectum to relieve spasm: Antipyrin, one gram; Tr. opii, one cc.; water, ninety cc.; this requires thirty minutes to act and leaves the base of the bladder quite anesthetic. In the use of the urine segregator, the conditions essential to its successful use are much the same as those for the cystoscope; thus the urethra must admit an instrument the equivalent in caliber of a No. 24 French sound; the bladder must be large enough to allow the segregator to be opened within it; this presupposes a bladder capacity of at least 150 cc. As the sense of sight is not needed to locate the ureteral orifices, the transparency of the bladder fluid is not essential. This constitutes a great advantage. Before using the segregator the bladder should be thoroughly cleansed with a boracic-acid solution; in men, the prostate should be massaged during irrigation of the bladder so that the subsequent introduction of the lever may not press out any pus to find its way into the bladder; the same method, already mentioned in catheterization, of suprarenal extract washing, followed by cocaine solution into the bladder, is here employed. The advantages claimed for the segregator are that it enables one to collect all the urine from each kidney without contamination; it obviates the danger of infection of a sound ureter or previously healthy kidney; it permits a differential diagnosis of certain tumors of the abdomen; it determines which kidney is diseased, giving us the functional capacity of each; and it informs us whether or not the bladder is infected.

Pathological Physiology.—Pathology in its broadest sense, writes Isaac Levin (*Med. Rec.*, September 1, 1900), is a group of sciences studying the structure of a disease organism, pathological anatomy; its chemical composition, pathological chemistry; and its functions, pathological physiology. In this latter we study not only the abnormality of the function of a certain organ, but also the influence such an abnormality has on the rest of the organism. The function may be abnormal by changing its character or, retaining its character, by changing in degree. For example, the heart with a valvular lesion forces some of its blood back into the venous system and thus its function is changed in character, but if the heart merely becomes weak it decreases its work and its function is changed in degree only. In the circulation we must also consider active and passive hyperemias, local anemias, the constituents of the blood, vessel changes, etc. The function of the respiratory organ may be changed in three ways: The air-tubes leading to the alveoli may be obstructed (tumors, bronchitis, etc.), the alveoli may be filled with some other substance than air (pneumonia, edema, etc.) or the musculo-nervous apparatus may cease to work properly. In any case the whole organism is deprived of its necessary supply of oxygen and is unable to get rid of the rapidly accumulating carbonic oxide. Dyspnea tends to increase the oxygen supply, but it has a bad effect on the organism. Digestion, metabolism, excretion and heat economy play important parts in the study of the patient. Clinical data are not sufficient, because we seldom meet with disease of one organ when the rest of the body is normal; so we must resort to experimentation and pathological physiology becomes synonymous with experimental pathology. It is indispensable to progress in the treatment and prevention of disease, and to it is already due our knowledge of the hygiene of food, immunization, and the prevention of epidemics.

Impotentia Virilis.—The chief symptoms to be combatted are those arising from the male genitals causing the neuresthenia so often witnessed in this affection. Chief among these symptoms are premature ejaculations, weak erections, pollution, spermatorrhea and prostatorrhea. Very frequently two or more may be combined. Zabludowski describes the therapy of these affections in the *Berlin. klin. Woch.* (August 13, 1900). Most of the afflicted patients could refer their troubles back to masturbation and other abuses and perversities *in venere*, while others laid the blame on early gonorrheic processes. In a few cases the cause could be traced to long-continued local treatment of gonorrhea, such as bougies, electrodes, cold sounds. Enuresis diurna accompanied many of the cases. Hypochondriasis was invariably present, especially marked on those days in which defecation was absent. The chief method used in treatment was the systematic massage of certain parts of the genital regions followed by massage of smaller and larger portions of the entire body. The object is to stimulate the entire vasomotor system increasing the tone of the blood-vessels. The self-reliance of the patient is also favorably influenced by this treatment. The technic is as follows: The patient, lying on his back, has each of his testicles gently manipulated by the operator. Care must be exercised never to grasp either testicle at opposite points, for in that case pain is caused. Then the manipulation gradually extends along the spermatic cord and also along toward the bulb of the urethra, and the perineum. Finally, the inner surface of the thighs is massaged. In various positions of the patient, *i. e.*, while lying on his side or on his abdomen, all these processes are carried out. Then follows massage of the lumbar and sacral regions carried out by means of pummeling with the fist, although not too severely. Then pressure and massage along the occipital, cervical and intercostal nerves follow. In all these manipulations the most time and care are necessary where painful areas are located. It has been found that, after the simplest palpation in the genital regions carried on through a few sittings, the sensitive areas become greatly diminished, and that the atonic condition of the skin which had easily broken out in clammy perspiration before, became sounder and more elastic. The resisting power of the muscles likewise increased. During treatment it is advisable for the patient to abstain from attempts at cohabitation for about six to eight weeks. The patient may exercise by walking, wheeling, swimming and riding horseback. With great nervousness combined with loss of weight, a short while in bed is advantageous. Change of scene is also advisable. Douches every morning with water at the temperature of the room keep the skin in good active condition. In cases of nocturnal pollution it was also found advisable to change the hour of the evening meal and also decrease the quantity of fluids taken before retiring.

THERAPEUTIC HINTS.

Sodium Phosphate in Urticaria.—*Wolff* gives the phosphate of soda internally, every three hours, in doses of sixty to seventy-five grains, or less in infants, to cure urticaria within the space of twenty-four hours. Locally he prescribes at the same time, as a lotion, a mixture often employed in America for eczema:

℞ Calamine Prep. } .....aa 3iss
Zinc Oxidi.... }
Ac. Carbolici..... 3ss
Aquæ Calcis..... 3xv
Aquæ Rosæ..... 3ivss.
M.

In infants, the quantity of carbolic acid ought to be reduced according to age. In chronic urticaria the phosphate of soda taken after each meal in the dose mentioned causes uniformly a rapid relief, but relapses often occur; indeed, the patients ought to continue the use of this drug until the tendency to relapse has entirely disappeared. Sodium phosphate is particularly efficacious in urticaria of a gastro-intestinal origin, which is often the case.

Bed Treatment of the Acute Psychoses.—*Serieux* and *Farnurier* of Paris warmly advocate rest in bed as being as important in acute mental disease as in any other acute disease. The horizontal position best favors the circulation in the brain and thus aids in overcoming the cerebral and constitutional exhaustion which varies as to cause, but is present in a large proportion of cases. The muscular system is relaxed, the motor centers rested and peripheral stimulation reduced to a minimum, while psychical repose is provided at the same time. When generally adopted, very beneficial results will undoubtedly be reported changing the clinical aspect of various forms of psychoses.

New Local Anesthetic for the Ear.—Aqueous solution of cocaine and eucaine having proved so unsatisfactory when applied to the tympanic membrane as anesthetics, the use of aniline oil and alcohol as vehicles, as first tried by *Albert A. Gray*, should prove a boon to aurist and patient, as paracentesis is stated to be entirely painless five minutes after the anesthetic is employed. Ten drops of the following preparation are injected into the external auditory canal and allowed to flow to the membrane:

℞ Hydrochlorate of cocaine..... 5 parts
Dilute alcohol..... 50 "
Aniline oil..... 50 "

Granulations of the tympanum can also be removed painlessly, first cleansing and drying the parts before using the solution. In case of thickened and hardened membranes the following formula is more effective:

℞ Hydrochlorate of cocaine..... 10 parts
Absolute alcohol..... 30 "
Aniline oil..... 70 "

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TROPICAL DISEASES AND OUR NEW POSSESSIONS.

Medical men in the United States, whether connected with the army or navy or not, had practically no knowledge or experience on the subject of tropical diseases or of common diseases occurring under tropical conditions which they were suddenly called on to treat when the United States acquired the Philippines and Porto Rico. The diseases which were prevalent among our soldiers in the Philippines were, in the order of their frequency, diarrhea and dysentery, malarial fevers, typhoid fever, and smallpox. Intestinal affections were the most prevalent and caused the largest number of deaths. Malarial fevers were second in order of frequency, but were not as malignant as it was expected they would be. Typhoid fever came next, after intestinal diseases, as a cause of death. Smallpox prevailed as an epidemic when Manila was first occupied and the troops were promptly infected, but the disease was soon controlled. Of these diseases, diarrhea and dysentery were due largely to the climate, to the heat and rains, and to the lowering of vitality consequent on heat-exhaustion. With care in the matter of diet and with avoidance of exhausting labor in the heat of the day, and of exposure to chill, these diseases should not exist unduly in the Philippine climate, but dysentery in its various forms is there always present. It must be remembered that the troops consisted largely of young men who knew nothing of the requirements of the climate, who were doing arduous work under the most adverse circumstances, and who were "trying" all the new drinks, fruit, etc., of the country. Smallpox and typhoid fever are said by some not to be dependent upon the climatic conditions of the Philippines, but smallpox is endemic among the Filipinos. Pemphigus in Luzon is of frequent occurrence and sometimes is extremely serious. In addition to the above, cholera, beriberi, and the plague are present to a greater or less extent in the Philippines, as well as in the Hawaiian Islands. Leprosy is deeply rooted in the Philippines, while the leper settlement at Molokai in the Hawaiian Islands is well known. These four last mentioned diseases, together with the yellow fever of Cuba and Porto Rico, are those against which the United States must be especially on its guard.

Our possessions in the East are, of course, not as extensive as those of England and other countries, nor have we held them sufficiently long for the medical men stationed there to do much original investigation. England's officers in India have done excellent work, as shown by some of the papers read recently at a meeting of the Section on Tropical Diseases of the British Medical Association, and presented in this week's issue of the Medical News.

The consensus of opinion on the subject of quinine as a prophylactic agent in malaria was that it was of great value except in those localities where the malaria was of a malignant form. Some investigators reported that they found it of no value as a prophylactic. The study of the metamorphosis of the *filaria sanguinis hominis* in mosquitoes and the transmission of the filaria through them while in the act of biting human beings has been carried out by Captain S. P. James of Travancore, India. He has formed the opinion that the Anopheles mosquitoes, rather than the Culex mosquitoes, are the usual efficient hosts of the filariæ. Another parasitic disease, ankylostomiasis, which has been the cause of a high mortality in certain parts of India, has received the attention of Major G. M. Giles, who has studied the life history of the parasite. He has demonstrated that the full life history of the *anchylostoma duodenale* is an example of dimorphism or heterogenesis. This parasite is considered to be the cause of the serious anemia

which is so common in those ports. The anemia is demonstrated to be caused by the presence of great numbers of these parasites which bleed the patient. Among other diseases which received attention were the various forms of abscess of the liver and a disease called yaws which is said to resemble syphilis.

As our business relations with the Philippines increase so will the necessity of thoroughly understanding the prevalent diseases of the tropics, both that they may be treated successfully and that they may be kept out of the United States.

It is incumbent upon the Government to aid the medical men of the army in every way in the study of these tropical diseases and of the treatment of other diseases under tropical conditions. Germany has an institute for the study of tropical diseases at Hamburg, and England has one at Liverpool. The post-graduate course in Tropical Diseases in the Army and Navy Medical School in Washington offers to our own medical corps, which may be detailed to tropical service, just the opportunity needed to enter this widening field of study. Its possibilities are vast, and the energetic young men of the country only need to have their attention directed to what is going to be a serious problem in medicine to prepare themselves adequately for the future. The more money that the American Government can appropriate now for investigation and for medical training along these lines, the greater will be the safety of her soldiers and merchants abroad and her citizens at home.

THE HAND AND THE GERM.

Little by little the apparent invincibility of the micro-organism has been shown to be a superstitious fallacy and the ubiquitous pus and infection producers have been ousted from one after another of their microscopic strongholds. After the uncertain reign of the carbolic spray, unreliable in its results and cumbersome and disagreeable to use, the simple application of heat, moist and sufficiently prolonged, has shown itself adequate to absolutely ensure the sterility of instruments and dressings, while that almost impregnable nidus for germs, the catgut suture, yields to the cumol disinfection without losing any of its virtue. And now a practicable method has been published (Katzenstein, *Centralbl. f. Chir.*, July 14, 1900) which makes it possible to efficiently sterilize the almost hopelessly delicate silk and lisle thread catheter without impairing either its finish or vitality.

But however much has been accomplished, the bacteriological battle still goes fiercely on in another quarter and the surgical strategist finds that in his own person his microscopic foes occupy a last citadel from which it is well nigh impossible to dislodge them. The very diversity of the different methods of hand-disinfection in use, Kelly's Weir's Ahlfeld's, Fürbringer's, Mikulicz's, gloves of cotton, leather and rubber, the wax and paraffin coatings of Schleich and Menge, sufficiently evidences the inefficiency of each.

In considering the technic of the various means of chemical sterilization, in which the in the proposals of Mikulicz, Schleich and Säng- subjected to a more or less prolonged immersion in disinfecting fluids, it is interesting to note the prominent rôle in the process ascribed to alcohol which is supposed to be a valuable synergist either through its fat-dissolving power or directly as a germicide. That both these views are erroneous, however, is well shown by Braatz (*Münch. med. Wochenschr.*, July 17, 1900) who calls attention to the fact that alcohol is really a very poor solvent for human skin-fat, 100 gm. dissolving only 0.07739 gm. in seventy hours, while many other substances that surpass it in germicidal power are practically less efficacious, and he attributes its value solely to its faculty of penetrating readily into the minutest furrows and interstices and then by its affinity for water facilitating the subsequent entry of aqueous antiseptic solutions.

The tendency to replace chemical disinfection by thorough mechanical cleansing is prominent in the proposals of Mikulicz, Schleich and Sänger. The former advocates simply protracted scrubbing with an alcoholic solution of green soap; Sänger has devised a soap of great mechanical efficacy on account of the sand incorporated in it, while Schleich's preparation, having resin soap as a basis and marble-dust as a detergent, contains a mixture of wax and paraffin pastes which is supposed to form an impregnable coating over the skin after the mechanical cleansing has been effected by the other constituents. In connection with these it is instructive to note the results of the experimental researches conducted independently by König and Blumberg (*Münch. med. Wochenschr.*, July 24, 1900), and Paul and Sarway (*Münch. med. Wochenschr.*, July 31, 1900) which establish

definitely the fact that more of the purely mechanical means are to be depended on to sterilize even artificially infected hands, and that of the chemical methods those having a mercury salt as prime agent are probably the most effective. The former authors strongly advocate the use of an aqueous 3-1000 mercury ethylendiamin citrate solution in place of the customary bichloride, as being less injurious to the skin and having greater penetrating power.

Haeger (Händereinigung, etc., Basle, 1900), in his discussion of gloves utterly condemns those of cotton, for the operator's use, and relegates them to the attendants, orderlies and nurses for whom they ensure a relative sterility. Leather gloves previously soaked in antiseptic solutions are much more reliable and for the first fifteen minutes are sufficiently impermeable to germs to be used with safety. Rubber gloves come nearer to the mark, but still are open to the danger of accidental rips and impede the operator to a degree depending on the perfection with which the natural conformation of his hand adapts itself to the conventional sizes supplied and hence also fall short of the ideal of combining absolute security with wholly unrestricted movement and tactile sense. The various coatings, paraffin, gutta-percha, etc., are totally unreliable and not adapted to general use.

A review of the results obtained in this field leads but to one conclusion, that no matter how carefully we sterilize our instruments and dressings, by neither mechanical nor chemical means can we bring our hands into a sufficiently germ-free state to promise ourselves immunity from infection, and the only other method at command, that of wearing gloves, is also far from perfect, owing to the demands of operative technic, for the thinner and less hampering they are the greater is the risk of tearing. Under these conditions the only remedy seems to lie in the most scrupulous avoidance of contact with infectious material rather than in any reliance on methods of subsequent disinfection. The prophylaxis involves two factors: one, the habitual use of gloves whenever suspected material is to be touched, and the other, the immediate vigorous cleansing of the hands when accidentally infected while still moist and before there has been time for the deeper layers to be invaded by the germs. This includes also the most careful toilet of the hands. A rough, chapped and abraded cutaneous surface defies the most persistent efforts at cleansing and the effect of the daily use of harsh alkali soaps and immersion in bichloride solution is to be counteracted only by a regular treatment with suitable emollients.

Inspired by a delusive optimism the surgeon has long been working in the hope of finding some agent powerful enough to be absolutely fatal to the germ and yet leave the skin intact, an *ignis fatuus,* for the requirement postulates the ability to precipitate albumin and the superficial epidermal cells must inevitably fall a prey long before the deeper-seated organisms are reached. The time has apparently come when we must acknowledge that further search for antiseptic combinations for hand-disinfection is fruitless and that innovations in technic are hardly to be counted on to bring much improvement. Through its inherent characteristics the hand cannot be either temporarily or permanently freed from its germs, for no matter how scientifically planned and carefully executed the mechanical cleansing, nor how energetic the chemical germicide, there will still remain countless numbers of micro-organisms snugly ensconced in inaccessible hiding-places. Under no other circumstances is prevention so infinitely better than cure, and it is only in the direction of constant and unremitting attention to prophylaxis that a nearer approach to the ideal is to be hoped for.

ECHOES AND NEWS.

NEW YORK.

Yellow Fever at New York.—The "MacClellan" from Havana brought one case of yellow fever to New York this week. The patient was transferred to Swinburne Island.

State Hospital for Tuberculosis.—The Commission of State Prisons at its recent annual meeting adopted the report of Commissioner Mantanye recommending Dannemora as the site for the erection of the State Hospital for Consumptives, and will urge the Hospital Commission to act favorably upon the recommendations contained in the report.

Sued by his Doctor.—Dr. R. H. Greene of this city is suing W. G. Newman, a prominent promoter, for $1200 said to be due him.

Woman's Medical Fraternity.—During the past year, the women of Syracuse University, College of Medicine, have organized Zeta Phi, the first and only women's medical fraternity in this country. They esteem it an honor that Dr. Eliz-

abeth Blackwell has consented to become a charter member, she having been graduated from this college and the first woman to receive the degree of M.D. in America. The purpose of the fraternity is to bring the women of the medical profession into closer touch with one another.

Typhoid in Women's Hospital in Syracuse.—The annual epidemic of typhoid fever has broken out in the State Custodial Asylum for Feeble-Minded Women at Syracuse and twelve persons are down with the fever, including the resident physician.

New Dispensary for St. Batholomew's.—A six-story building, to be occupied as a dispensary, will be erected by the St. Bartholomew's Church Corporation, at 215 and 217 East Forty-second Street, a plot 50 by 92, adjoining the church's present mission house. The cost of the new building is estimated at $200,000.

Four New Electric Ambulances.—Four automobile or electric ambulances are now building for private hospitals in this city. The Roosevelt, Presbyterian and New York Hospitals are making the experiment. St. Vincent's Hospital has had an electric machine for several months. The new gifts to Roosevelt are 7 feet 6 inches long, which is about eighteen inches longer than the ordinary horse-drawn ambulance, and weigh 4800 pounds each.

Rewards of Lawyers.—A distinguished lawyer in this city, in a recent number of the *New York Law Journal*, published some interesting statistics of the practice of law in New York. The practice of criminal law is not considered in his statistics. Taking the last July calendar of the Supreme Court in the First Department this investigator finds that there were 11,230 cases on it which were divided among 2190 lawyers or firms. Nearly 1000 of these lawyers had only one case and more than 2000 of them did not have as many as six cases to try in a year. His figures show that only five law firms in this city had more than 100 cases, and among these five were found only one of the great law firms of twenty-five years ago. Of these five firms three represent large corporations which, from the nature of their business, necessarily have many cases in court. The great law firms of other days have not held their own in this branch of the profession. The bulk of court work has passed into other hands and they are fast becoming firms of solicitors. From the statistics published it is shown that 21 lawyers had upward of 50 cases, 60 lawyers had upward of 20 cases and 104 lawyers had from 10 to 20 cases. The writer suggests that time is sure to bring about a more marked division than now between lawyers who try cases and those who do not, and he believes that the former will ultimately be recognized as a class of advocates. He says: "The average income of men of our profession does not equal $5000 a year. An advocate who could earn $100 a week trying cases would earn the average income of the profession." He makes no mention of what the lawyers make "on the outside."

PHILADELPHIA.

Smallpox in Pennsylvania.—Smallpox still persists in western sections of the State. The schools and Sunday-schools in Erie have been closed because of an epidemic of the disease.

Many Pharmacists Fail.—At a recent examination held by the State Pharmaceutical Board there were 53 candidates for license as regular pharmacist and 42 as qualified assistant. Of the first number only 14 were successful and of the latter only 20 received a license.

Impure-Food Dealers Prosecuted.—The courts are dealing summarily with the above class of venders, four out of sixteen cases being disposed of by pleas of guilty or by conviction. The articles include butter, milk, and flavoring syrups.

Physician Unjustly Censured.—The body of a child dead of diphtheria lay by an open window for fifteen hours in a house on Annin Street, the house not being placarded. The family physician, Dr. Nebeker, was censured by the Board of Health for delay in notification. An investigation showed that the delay was due to the post-office failing to properly deliver the letter of notification mailed by the physician, thus exonerating him from all blame.

Extension of Maternity Home.—An amendment to the charter of the Jewish Maternity Association, lately granted by the courts, allows of an enlargement of the Society's work. A gynecological ward and operating-room will be added, these being urgently required by the institution to care for the increased number of patients applying.

Philanthropic Physician's Bequests.—Dr. Detweiler, of Reading, who died recently, disposes by will of a large property. Having a large income from other property the doctor had for the last fifteen years given the entire income from his medical practice to charity.

A New Healer of the Blind.—Mr. H. N. Casson, who is said to hail from New York City, is preparing to heal the blind population of this staid Quaker hamlet. He dispenses two medicines, the "brown" and the "green," and talks glibly to reporters. It is stated that an offer to treat the inmates of the Pennsylvania Industrial Home for Blind Men was promptly refused by the Superintendent of that institution.

Water Filtration.—The experimental filter plant at the Spring Garden Pumping Station was put in operation September 6th in the presence of the mayor and other city officials. Chemical and bacteriological tests of the filtered water and of the various filtering materials will follow. It is earnestly hoped that this marks the beginning of the end of Philadelphia's notoriously un-

healthy water-supply. The public-school buildings of the city have been equipped with filters during the summer.

Case of Filaria Sanguinis Hominis.—An interesting case of filaria, the second case met with in this city, is now at the Pennsylvania Hospital. The patient is a sailor from the West Indies, twenty-two years of age, recently operated upon by Dr. John H. Gibbon. The filariæ were found in large numbers and were confined to the lymphatics of the spermatic cord, the scrotum not being involved.

CHICAGO.

The Bacillus.—This is the name of a new monthly periodical published under the auspices of the Illinois Medical College. Its editor is Dr. Fred. C. Zapffe.

Dr. Murphy's Place Filled.—Dr. Alexander H. Ferguson has accepted the Chair of Surgery and Physical Surgery in the Chicago College of Physicians and Surgeons, recently vacated by Dr. J. B. Murphy.

Evanston Hospital—The endowment fund of this institution is rapidly increasing, $25,000 having already been subscribed. Before the remodeling can be completed and the desired contagious disease ward constructed, the directors need $20,000 more.

Pure-Food Law.—This law is not clearly understood by the laity. It is intended to protect the buyers against imposition. If a person wishes to buy oleomargarine for butter, chickory for coffee, or dilute acid for vinegar, he is at liberty to do so, but the law stipulates that such articles shall be labeled. The work of the Illinois Pure-Food Commission should be commended.

American Academy of Railway Surgeons.—The Seventh Annual Meeting of the Academy was held in the State Senate Chamber, St. Paul, Minnesota, September 5th and 6th, under the Presidency of Dr. Charles A. Wheaton, of St. Paul. Fifteen papers were read and freely discussed. There were twenty new Fellows elected. The officers for the ensuing years are: President, Dr. D. S. Fairchild of Clinton, Ia.; First Vice-President, Dr. W. L. Estes of South Bethlehem, Pa.; Second Vice-President, Dr. W. J. Mayo of Rochester, Minn.; Secretary, Treasurer and Editor, Dr. T. B. Lacey of Council Bluffs, Ia. Chicago was selected as the place for holding the next annual meeting, the date to be fixed by the Executive Board.

Northwestern University Medical School.—Dr. John B. Murphy has accepted a professorship in Surgery and Clinical Surgery in the Northwestern University Medical School, Chicago Medical College. Dr. Murphy has been appointed Surgeon-in-Chief of Mercy Hospital with the direction of the surgical teaching in that hospital. He will give two clinics each week at the hospital. The hospital now contains 260 beds with abundance of clinical material. A new amphitheater with a seating capacity of 300 is in progress of construction. Dr. Archibald Church has been recently appointed Professor of Nervous and Mental Diseases in Northwestern University Medical School, Chicago Medical College and head of the Neurological Department.

GENERAL.

Obituary.—At Hackensack, N. J., September 8, 1900, Dr. William A. Hillebrecht in his twenty-seventh year.

Poison in Glazed Wares.—A Frankfort newspaper calls attention to the fact that for some time past certain kinds of silver-mounted glass and porcelain wares, such as cups, glasses, jars, vases, etc., have been placed upon the market. The silver on these articles is applied by means of a galvanoplastic process, in baths which contain very large quantities of potassium cyanide. As glazed wares have innumerable hairlike cracks, this deadly poison enters these cracks, and the articles, beautiful to look at, become a severe menace to the health of anybody using or handling them, and especially as it is impossible in the course of manufacture to remove this poisonous residuum. Only a short time ago a very severe case of poisoning resulted from the use of such ware. These goods are chiefly exported to the United States from Frankfort, Berlin and Stuttgart.

Diphtheria from the Horse.—Dr. L. Cobbett reports, in a recent number of the London *Lancet*, the finding of a bacillus, closely identified with Loeffler's diphtheria bacillus, in the secretions of a horse. Dr. Fraser, health officer of Portsmouth, attended a little girl with diphtheria and found, on looking for the cause of the disease, that a pony of her father's was ill with a purulent and bloody discharge from the nose. The toxic action of the isolated bacillus was similar to that of Loeffler's bacillus and its toxin, from culture, behaved as does the toxin of this microorganism. This discovery serves to point out another source of infection for diphtheria and also offer some interesting side-lights on the subject of antitoxins.

Havana's Yellow Fever Problem.—Governor-General Wood has appointed a board of immigration consisting of Drs. Gorgas and Havard and two Cuban physicians to draw up resolutions concerning immigrants. Since July, 1899, 26,000 immigrants have arrived in Havana and 10,000 are expected during the next two months. There were fifty deaths from yellow fever in Havana during the month of August. While the general health of the city is better than ever before, there is a comparatively large number of cases of yellow fever. Owing to the large number of immigrants this is unavoidable. Seventy-five per cent. of the total number of cases were among immigrants who had been in Havana less than a

year. The municipality will consider the advisability of raising money for the sanitation of the city.

Hydrophobia Scare.—The mayor of Wheeling, W. Va., has issued a proclamation taking effect September 3d that all dogs must be confined or muzzled. Two deaths from hydrophobia have occurred and it is hoped that a panic, such as was created four years ago in that city, when many people were bitten and a number died, may be averted.

St. Louis City Hospital Alumni.—This Society met September 6th. Drs. G. Campbell and C. Loeb read papers.

Southern Surgical and Gynecological Association.—The meeting of this Association will be held in Atlanta, November 13th, 14th, and 15th, under the presidency of Dr. A. M. Cartledge of Louisville. Members of the medical profession are cordially invited to attend.

The Galveston Disaster.—Latest reports from Galveston show that the extent of the hurricane was more widespread than at first thought. The number of deaths will probably reach 5000. Of these some are physicians of the city. Those who were uninjured are overtaxed with the amount of medical and surgical work which is necessary to be done. The greatest danger that could happen to Galveston and the United States is the outbreak of yellow fever in the afflicted city. The Government has already sent Health Officers to try to avoid such a contingency.

The Plague.—Recent reports of the plague situation at Glasgow are assuring. New cases are being reported each day, yet they are occurring singly and among those under the observation of the Health Officers of the city. At the present time about twenty cases have been isolated and 150 persons are under strict surveillance.

In India the plague situation remains much the same. This week's reports confirm those of last week, and tend to show that with both plague and famine, India's people, in certain provinces, are suffering greatly. It is reported that the mortality from the plague is at least 1000 a week. The Red Cross and other relief societies are ministering to some 3,000,000 people.

Doctors for the Navy.—A naval medical board of examiners for examination of candidates for admission to the medical corps of the navy is now in session at the Naval Laboratory, Brooklyn, N. Y., and will remain in session for several months. There are now seventeen vacancies in the list of assistant surgeons. Congress at its last session passed a law taking assistant surgeons out of the steerage and making them ward-room officers as soon as they enter the service, giving them the rank of junior lieutenants and the pay of assistant surgeons in the army. Candidates must be between the ages of twenty-one and thirty. Circular of information can be obtained on application to the Surgeon-General of the Navy, Navy Department.

Gynecologists and Obstetricians.—The thirteenth annual meeting of the American Association of Obstetricians and Gynecologists is to be held in Louisville, Ky., Tuesday, Wednesday and Thursday, September 18, 19 and 20, 1900. The presidential address will be delivered by Dr. Rufus B. Hall of Cincinnati. The following papers are announced: "Erroneous Objections to Bilateral Inguinal Celiotomy," by Dr. A. Goldspohn of Chicago; "Round Ligament Ventrosuspension of the Uterus," by Dr. D. Tod Gilliam of Columbus; "A Satisfactory Method of Suspension of the Uterus," by Dr. Robert Morris of New York; "Occasional Incidents in Abdominal Surgery," by Dr. W. H. Myers of Fort Wayne; "Dermoid Cysts Complicating Pregnancy, by Dr. T. B. Eastman of Indianapolis; "Teratoma of Ovary," by Dr. W. E. B. Davis of Birmingham; "Treatment of Chronic Cystitis," by Dr. Charles G. Cumston of Boston; "Perforated Gastric Ulcer," by Dr. Henry Howitt of Guelph; "Malignant Disease of Pelvic Organs," by Dr. A. P. Clarke of Cambridge; "Cholethiasis," by Dr. H. E. Hayd of Buffalo; "Surgery of Gall-Bladder," by Dr. A. Vander Veer of Albany; "Surgery of Liver and Bile-Duct," by Dr. W. G. Macdonald of Albany; "Jaundice Following Abdominal Section," by Dr. H. D. Ingraham of Buffalo; "Diagnosis of Ectopic Pregnancy," by Dr. J. F. Baldwin of Columbus; "Extra-uterine Pregnancy," by Dr. W. B. Dorsett of St. Louis; "Papilloma of the Vulva." by Dr. E. J. Ill of Newark; "The Hymen and Virginity," by Dr. J. M. Duff of Pittsburg; "Private Hospitals and Their Management," by Dr. Joseph Price of Philadelphia; "Extirpation of the Rectum and Sigmoid per Vaginam," by Dr. John B. Murphy of Chicago; "Post-rectal Tumors," by Dr. J. F. W. Ross of Toronto; "Ovarian Fibroma," by Dr. L. H. Laidley of St. Louis; "Rubber Gloves in Surgery," by Dr. C. C. Frederick of Buffalo; "The Ligature and Dry Sterilized Catgut," by Dr. J. H. Carstens of Detroit; "Contraindications to Intraperitoneal Use of Normal Salt Solution After Laparotomy," by Dr. Frank F. Simpson of Pittsburg; "Simple Methods in Pelvic Surgery," by Dr. J. B. Deaver of Philadelphia; "Treatment of Fibroids in Non-Pregnant Uterus," by Dr. E. F. Fish of Milwaukee; "Acute Senile Endometritis," by Dr. L. H. Dunning of Indianapolis; "Tubo-ovarian Abscess," by Dr. E. Ricketts of Cincinnati; "Difficult and Obscure Pus Cases," by Dr. W. B. Chase of New York; "Discussion of Pelvic Suppurations," by Dr. Joseph Price of Philadelphia. Other papers are announced to be read by Drs. M. Rosenwasser of Cleveland, C. A. L. Reed of Cincinnati, H. W. Longyear of Detroit, W. P. Manton of Detroit, F. Blume of Pittsburg and L. S. McMurtry of Louisville.

Jacob M. Da Costa, M.D., LL.D.

OBITUARY.

DR. JACOB M. DA COSTA.

The world of medical science loses one of its greatest lights in Dr. Da Costa of Philadelphia, who died suddenly September 12th at his country home, Ashwood, Villanova, from a heart trouble of some years' duration.

Dr. Da Costa was born in St. Thomas, West Indies, February 7, 1833. He was thus sixty-seven years of age. His education as a boy and college student was received in Germany. His medical training was obtained in the Jefferson Medical College, where Dr. Mutter was his preceptor. He graduated at the early age of nineteen, presenting as his thesis a study on Epithelial Tumors and Cancer of the Neck. He then spent two years in the schools and hospitals of Paris and Vienna, entering practice in Philadelphia on his return.

In 1864 Dr. Da Costa was appointed lecturer on clinical medicine at the Jefferson Medical College and in 1872 was chosen to occupy the chair of Theory and Practice of Medicine left vacant by the death of Professor Dickson. He continued to teach for more than twenty years, resigning this chair several years ago to occupy that of Practice of Medicine and Clinical Medicine. For the past few years he has been Professor Emeritus of Practice of Medicine and Clinical Medicine.

Dr. Da Costa's great skill in physical diagnosis was gained in his lifelong work at the Episcopal, Philadelphia and Pennsylvania Hospitals, and from their wards he has contributed much to the advancement of medical science. In 1855 he published his studies on the "Pathology of Acute Pneumonia," and in 1857, the "Physicians of the Last Century," an interesting historical study, appeared. Investigations on "Cancer of the Pancreas" and "Serous Apoplexy" followed in the

succeeding two years. In 1864 his classical volume on "Medical Diagnosis" was put forth. This has continued one of the standard works on the subject, now just appearing in its ninth edition. Numerous shorter contributions from his pen have been published in most of the prominent medical journals of the country.

In the field of the natural sciences closely related to medicine Dr. Da Costa was an enthusiastic worker. He joined the Academy of Natural Sciences of Philadelphia the year of his graduation, working with such masters as Leidy and Cope. He was also a member of the American Academy of Arts and Sciences and the American Philosophical Society. He became a member of the American Medical Association in 1855. As a diagnostician and as an interpreter of the physical signs of disease Dr. Da Costa had a world wide reputation. His private practice was very large and his many interests made him a prominent and honored member of the profession. Not Philadelphia alone but the whole medical world will miss him.

Dr. Da Costa was a facile and accomplished public speaker and was unsurpassed in his special department as a clinical lecturer. His subject was systematically arranged in his mind and in his method of diagnosis by exclusion he would take up each hypothesis and weigh the evidence carefully *pro* and *con,* finally leading the discussion up to the culmination in the elaboration of the actual diagnosis in a manner that riveted the attention of the class, the students giving every evidence of interest and gratification by crowding to his lecture-hall. His language was always well chosen and he never hesitated for the correct word. He was a student of correct diction, and both in his lectures and in his writings showed his familiarity with the English classics. He also showed his wide extent of medical reading by references to French and German authorities, and, as a consultant as well as clinical teacher, he demonstrated the fact that he kept himself well posted in the current literature of his profession. His monograph upon "Harvey and the Discovery of the Circulation of the Blood" also gave evidence of his studies in the literature of an earlier day in medicine.

As his clinical lectures were much sought after he was frequently annoyed by unauthorized reports which were made of his lectures, and which abounded in infelicities of expression or actual errors, which he had no opportunity of correcting. Thus in the last volume of the "Index Medicus" there are sixteen titles of articles ascribed to him, of which at least two-thirds were unauthorized. But this is one of the things that most clinical teachers suffer from and is probably unavoidable. Among his contributions to medical literature not already noted are the following: Inhalation in the Treatment of Diseases of the Respiratory Passages, 1866; On Quinoidine in the Treatment of Intermittent Fever, 1855; A Case of Cerebral Neuralgia Terminating Fatally by Serous Apoplexy, 1859; Cases of Splenic Leukemia and their Treatment by Hypodermic Injections of Ergotin, 1875; Diabetes Insipidus and Its Treatment by Ergot, 1875; Observations on the Action of Narcein (Penna. Hosp. Reports), 1868; Certain Forms of Muscular Rheumatism, Particularly Wry Neck, and Its Treatment (Pa. Hosp. Reports), 1868; A Contribution to the Therapeutics of Acute Rheumatism, based on a Series of Cases Treated with Bromide of Ammonium (Pa. Hosp. Reports), 1869; Remarks on Relapses in Typhoid Fever, 1877; Harvey and His Discovery, 1878; Cases of Starvation Fever, 1879; The Fluorides in Medicine, 1881; The Nervous Symptoms of Lithemia, 1881; Some Points in the Pathology of Tubercle, 1882; On Catarrhal Fever, 1893; Observations on the Salts of Nickel, 1883; The Higher Professional Life, 1883; In Memoriam, Biographical Sketch of Samuel D. Gross, read before the Association of American Physicians, 1884; Diseases of the Pericardium (in Pepper's System of Medicine), 1885; Some Observations in the Use of Hydrochlorate of Cocaine, Especially its Hypodermic Use, 1886; Remarks on the Treatment of Rose Cold and Hay Fever by Cocaine, 1886; Address of Welcome to the Newly Elected Associate Fellows, Centennial Celebration College of Physicians, 1887; The Methods of Medicine in the Near Present, 1887; Biographical Sketch of Dr. Austin Flint, 1887; Address at the Dinner Given to Dr. D. Hayes Agnew by the Medical Profession in Honor of the Fiftieth Anniversary of his Entrance into the Profession, 1888; Researches on the State of the Ganglionic Centers in Bright's Disease (in cooperation with Dr. M. Longstreth), 1880; Relation of the Diseases of the Kidney, Especially Bright's Disease, to the Diseases of the Heart; the Middleton Goldsmith Lecture delivered before the New York Pathological Society, April 18, 1888; the Treatment of Valvular Disease of the Heart, 1888; Professional Aspirations, Valedictory Address, 1891; Functional Disorders of the Heart (Cyclopedia of Diseases of Children, Keating), 1891; Malarial Paralysis, 1891; The Pulmonary Complications of Influenza, 1892; Address before the Harvard Alumni Association, 1893; The Albuminuria and the Bright's Disease of Uric Acid and of Oxaluria, 1893; Rheumatism (article in Am. Text Book of Dis. of Children, Starr), 1894; Cardiac Asthma —Relations to Heart Exhaustion, 1894; The Coexistence of Typhoid and Malarial Infection, 1897; On the Significance of Jaundice in Typhoid and on its Hepatic Complication without Jaundice, 1898; Phlegmasia Alba Dolens, or Phlebitis of the Leg in Pneumonia, 1898; An Interesting Case of Cholecystitis Simulating Appendicitis, 1899; Anomalous Eruptions in Typhoid Fever, 1899; A Case of Typhoid Cholecystitis Ending in Recovery, 1899; Rapidly Recurring Hemiplegia in Acute Lead Poisoning, 1897.

Dr. Da Costa was a widower, his wife having died seventeen years ago. One son, a member of the Philadelphia bar, survives him.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, September 1, 1900.

THE QUARREL BETWEEN THE BOARD AND STAFF OF THE NATIONAL HOSPITAL FOR THE PARALYZED AND EPILEPTIC—UNYIELDING ATTITUDE OF THE BOARD—LEAD-POISONING IN THE POTTERIES—PROPOSED NEW GOVERNMENT RULES—THE MALARIAL EXPEDITION OF THE LIVERPOOL TROPICAL SCHOOL—DISCOVERY THAT ELEPHANTIASIS IS DUE TO MOSQUITO BITES FROM INOCULATION OF THE FILARIA—BRITISH MEDICAL ASSOCIATION—TREATMENT OF FRACTURES—EARLY USE OF MASSAGE AND PASSIVE MOVEMENT ADVOCATED—INSANITY IN LEAD-WORKERS.

The differences between the staff and the board of management of the National Hospital for the Paralyzed and Epileptic to which I referred in a previous letter are no nearer a solution. The board have taken up an absolutely unjustifiable and unyielding attitude. A meeting of the governors and subscribers has been held to consider (1) whether the demand of the staff for direct representation on the board should be granted and (2) whether it is desirable to hold further inquiry into the condition of the hospital. The chairman argued that as it was possible that the conduct of members of the staff might come before the board for inquiry it would be improper that they should sit in judgment on themselves. Of course the answer to this is the occasion on which the conduct of any of the staff required inquiry must be insignificant compared with those in which they can furnish valuable assistance in the deliberations of the board, and it would be easy to make a rule excluding a medical officer from any deliberation on his conduct. Curiously this very board which is accused of mismanagement by the staff appointed a subcommittee to report on these charges and therefore sees no anomaly in sitting in judgment on itself while denying its medical officers not this power—for they modestly ask for only two seats on the board—but the slightest voice in the management of the hospital. Sir Henry Burdett, who is a well known authority on hospital management, commended the plan of St. Thomas', the Middlesex, the Brompton, and the London Hospitals, in which there is a medical committee consisting of the staff and two members of the board of management. He went on to add that, having paid the hospital a visit in the company of the Hon. Sydney Holland, the Chairman of the London Hospital, there could be no question that the arrangements were excellent.

But neither of these gentlemen nor any other layman, however experienced in hospital management, is competent to give an opinion on the charges made by the staff. These are specific allegations of mismanagement, such as insufficient feeding of the patients and deficient supply of nurses. These conditions could never have arisen if they had a voice in the management of the institution. Something more than the board's exculpation of itself is required. If it persists in its unyielding attitude it will not be able, at any rate, to resist the demand for an independent inquiry which the staff now demands. But such should not be necessary. Who are the proper judges as to the sufficiency of the nursing and diet—a number of laymen or probably the most distinguished medical staff that ever gave its services to a hospital?

The cases of lead-poisoning which have occurred in the potteries have aroused widespread attention and even fashionable women, such as the Duchess of Sutherland, have joined in the agitation for preventive measures. The Home Secretary has prepared a draft of amended rules for china and earthenware manufacturers which have been submitted to employers for their consideration prior to formal service. The first requires that the lead must be "fritted"—a process that renders it much less injurious and which can be performed without serious detriment or inconvenience. Rule 2 is that "After July 2, 1902, no material containing lead which yields to a dilute solution of hydrochloric acid more than two per cent. of its dry weight of a soluble lead compound, calculated as lead monoxide, shall be used in any place or process included in Rule 1. The manufacturers think that these rules will seriously cripple them, particularly the second, in competition with foreign manufacturers subject to no such restrictions, and suggest as an alternative the use of dilute sulphuric acid by the workers, which is largely used in Germany, where lead-poisoning is said to be unknown.

The second malarial expedition of the Liverpool School of Tropical Medicine has telegraphed home a most important discovery from Bonny in Nigeria, *viz.*, that they have discovered the filaria which causes elephantiasis in the proboscis of the mosquito. The same discovery appears to have been simultaneously made by Dr. Low in England in mosquitoes brought from Australia, and by Captain Janes in India. The fact that the filaria can live in the mosquito has long been known and Dr. Manson some years ago propounded a theory as to the part played by the mosquito in the life cycle of *filaria nocturna*, but not that the insect directly conveyed the disease.

At the meeting of the British Medical Association Mr. W. H. Bennett read an exceedingly important paper on the treatment of fractures, advocating methods which completely revolutionize current practices. He wrote to a large number of surgeons in England inquiring as to their practice and received about 300 replies. Up to recently passive movement was never used until a late stage; now there is a distinct tendency to discard splints which do not allow of passive movements. Passive movements used within the first two days may be spoken of as "immediate;" from two to four days after fracture, as "intermediate;" after fourteen days, as "remote." Those surgeons who used movements early got

the quickest recoveries. There is a general tendency to the disuse of plaster-of-Paris splints, as these tend to cause slow union and prolonged disability. Nearly half the surgeons who replied had no experience with operative treatment for simple fractures. The risks of wiring the patella are by no means small and do not seem to depend on the method used. Out of 111 surgeons who replied on this point 3 had had fatal cases, 8 had had to amputate, 16 had had suppuration with ankylosis, 5 had had refracture, or cutting of the wire through the bone during attempts at movement, 10 had had recurrent arthritis. Mr. Bennett considered that in fracture of the patella operation could not be looked upon as ideal treatment and that in the future a rational method would be adopted with early splinting and early movement for all cases in which there was an interval of ½ or ¾ inch, while an operation would be performed in cases of wide separation. As to the early use of massage and passive movement those who tried it are much in favor of it and the opposition is merely theoretical. It is the treatment of the future.

Dr. Robert Jones (Claybury Asylum) read a paper on insanity in lead-workers. Out of 1050 male patients at the Claybury Asylum 35 owed their condition to lead-poisoning. The occupations of the patients were painters, glaziers, plumbers, gilders, electro-plate workers, smelters and pottery glazers. The greatest danger prevailed among those engaged in white and orange lead factories; fine particles of the "dust" containing carbonates and oxides were inhaled from the furnaces. In spite of many Factory Acts a considerable number of cases of lead-poisoning occur yearly, frequently from the carelessness of the workers. The symptoms of lead encephalopathy in 19 patients were varied and included blindness (often of sudden onset), attacks of partial paralysis, epileptic or hysterical fits, mania, melancholia, delirium, apathy and dementia. Some of the cases exhibited symptoms like those of general paralysis of the insane. Headache and loss of memory were not uncommon, as well as auditory and visual hallucinations, and delusions of persecution. Epileptic fits occurred in 7 out of the 19 cases. Treatment consisted in administration of abundant proteids, milk, eggs, open air exercise, electric baths, galvanism, and aperients. The majority of the cases improved under this treatment.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

CHRONIC INTUSSUSCEPTION—MULTIPLE MYELOCYSTOCELE—TUBERCULOSIS OF THE JOINTS—ANEURISM OF THE ARCH—ESOPHAGOSCOPY—CONGENITAL HIP DISLOCATION—TABES DORSALIS IN CHILDREN—VACCINE INFECTION OF THE EYES—GALL-STONES—ETIOLOGY OF CANCER—UTERINE RUPTURE.

Enderlein, at the Aerztlicher Verein in Nürnberg described the features of a case of chronic intussusception and showed the post-mortem preparation. A two-and-a-half-year-old boy had been suddenly attacked late in March by colic in upper part of the epigastrium and by mucous stools alternating with bloody and normal movements. August 2d when admitted an almost transversely placed tumor was palpable in the left epigastrium, which traveled slowly down the descending colon, became again almost transverse at the left Poupart ligament and two months later prolapsed through the anus. At the point of the prolapse was a valve-like projection, with small lumen admitting at once into the intestinal canal from which normal evacuations had occurred the day before. The invagination began at about the middle of the transverse colon and extended to the anus. The outer sheath presented several constrictions which were the origin of secondary intussusceptions. A sharp bend over the brim of the true pelvis was the seat of several pressure perforations. Much thickening of the bowel was present and the inner surfaces adherent for sixteen centimeters. The ileocecal valve had wandered through the colon from one end to the other within seven months and the prolapsed portion contained the ileocecal valve and partially inverted appendix.

Multiple myelocystocele was presented by another specimen which he brought before the same meeting. A seven-months-old female child had come under treatment for edema and swelling of the abdomen; it was still nursing, hence ambulatory treatment was necessary; no fever; *per rectum* a large cystic, navel-high mass was made out. At the autopsy the following facts were elicited: The tumor was a much hypertrophied bladder; behind this an apple-sized, smooth-walled, elastic cyst between the rectum and the sacrum and coccyx, pressing alike on the bladder and ureters causing hypertrophy, dilatation and hydronephrosis; closely adherent to those bones without a definite septum between, clear fluid contents, numerous connective-tissue septa and many daughter-cysts identically like the parent in character, especially grouped about the lower pole; neuroglia and very many axis cylinders in the walls; single-layer cylindrical epithelial lining. The nature of the condition was a cystocele derived by construction during embryonal life from the spinal cord, especially the central canal. The multiplication of the daughter-cysts, very like ovarian growths, is an exceedingly rare condition.

Rosenberger, at the Aerztlicher Bezirksverein, Würzburg, May 1, 1900, said that too often today we are prone to ascribe to tuberculosis any joint lesion at all obscure, especially in the presence of a history of the disease, immediate or remote. But many other factors may be at work. An acute or old infectious inflammation may create an osseous or periosteal focus which, although quiescent for years, may suddenly be kindled by some external cause. He cited a case of a woman who for eight years had undergone all known surgical treatment of joint tuber-

culosis except resection. When he saw her the diagnosis of syphilis was made from the wide, deeply drawn, shining, radiating, knotted scars; from the presence of two gummatous swellings of recent and, apparently to superficial investigation, of inflammatory origin; from the entirely satisfactory general condition of the patient, notwithstanding her long history, and from the absence of ankylosis in the joint, in fact of much loss of its function. Antisyphilitic treatment proved the diagnosis. His conclusions were that traumatism may determine gummata, just as abrasions of the skin do the inflammatory signs of syphilis, as recent syphilitic scars show tumor-formation when cut, and as uncleanliness and the rubbing of the clothes bring about condylomata lata.

Ewald, at the Gesellschaft der Charité-Aerzte in Berlin, July 12, 1900, presented an aneurism of the arch of the aorta, which had produced a thrombosis of the vena cava superior to the lumen of a quill and thereby established a most interesting collateral venous return, especially over the thorax and abdomen in front.

Reitzenstein (Nürnberg) at the Mittelfränkischer Aerztetag at Fürth, June 30, 1900, rehearsed clinical observations of esophageal conditions and praised very highly the use of the esophagoscope in diagnosis and treatment. Case I.: A von Hacker gastric fistula of six months' standing was exhibited, done for cicatricial stenosis after the inhibition of acid with suicidal intent. The esophagoscope *per oram* and *per fistulam* showed several marked cicatrices. With its aid sounding was done up to 37 cm. through the stomach, and up to 21 cm. through the mouth. The subsequent treatment to be followed was external esophatomy to remove a large high-placed scar and then slow dilatation to the normal size. Case II.: Twenty-two centimeters from the teeth-line the esophagoscope revealed a piece of bone firmly impacted, measuring 3½ cm. long by 1½ cm. wide, absolutely occluding the lumen and producing pressure ulcerations. With the aid of the instrument the body was turned and extracted. Case III.: By means of the esophagoscope was visible 40 cm. from the teeth-line in a man thirty-five years of age, with a history of 2½ years' standing, a smooth patch which did not move with respiration. The esophagoscope and sounds could not be carried any farther in. On withdrawing the instrument there appeared at 37 cm. a slit-like opening, which at 35 cm. passed into another which had respiratory displacement; from here on it was possible to pass the sound into the stomach at 57 cm., a thing impossible before. The diverticulum had a capacity of 50 ccm. and the characteristic chemical condition of its contents.

Mayer (Fürth) showed a six-year-old girl who four years ago had had a forcible reduction of a congenital dislocation of the hip. The result was a slight prominence of the trochanter due probably to the shallow acetabulum and almost perfect gait.

Von Rad (Nürnberg) discussed two cases of tabes dorsalis in children. Each father had had syphilis and the mother of the second patient gave signs of cerebral syphilis. Case I.: Girl, eleven years old, spinal myosis, optic atrophy, concentric limitation of the visual field, disturbances of color sight, Westphal's and Romberg's sign, paresthesiæ, hypesthesia and hypalgesia of the legs, distinct ataxia of the upper and lower extremities, normal bladder function, ulcer-scars in the mouth, lymphadenitis. The onset dated back two years and began with distinct and rapidly increasing optic-nerve atrophy. Case II.: Boy, nine years old, onset with bladder difficulty (dysuria and incontinence), slightly different slowly reactive pupils, normal fundus of the eyes, Westphal's and Romberg's signs, no distinct ataxia, hypesthesia and hypalgesia of the legs, girdle-form hypesthetic zone about the thorax.

Von Forster (Nürnberg) has observed four instances of vaccine infection of the eyes of attendants upon freshly vaccinated children and attributable to the extraordinary activity of this year's virus. The pustules were located in part on the lids and the conjunctiva. The cornea escaped. Confluence occurred in one case and a purulent discharge ensued. Recovery was in each patient prompt and there were no sequelæ.

Von Kryger (Erlangen) presented an epitomized report of the results obtained in gall-stone cases at his clinic during the last few years. Eighteen operative cases had occurred, distributed by years, two in 1894, one each in 1896 and 1898, nine in 1899, five thus far in 1900; five deaths, one each of empyema, liver abscess, peritonitis, carcinoma of the gall-bladder and cholangitis. Improved knowledge of the disease accounts for the greater number of cases within the last two years, but the diagnosis still remains fraught with great difficulties. Not always, not often even, are the pathognomonic signs of jaundice, colic, enlargement and tenderness of the gall-bladder, concretions in the feces, etc., present. Rather oftener does one find merely pain in the abdomen with vomiting, sufficient to draw attention to the stomach or intestines merely as the site of the trouble. So often does this happen that when there is abdominal trouble which cannot be definitely attached to another organ, one should always think of the gall-bladder as a very likely seat. Chief among the conditions for a differential diagnosis are gastric disorders, intestinal lesions, floating kidney, herniæ and genito-urinary affections. Direct indications for operation are enumerated: (1) Frequent brief, rapidly recurrent attacks of colic; (2) intense colic; (3) persistent jaundice; (4) colic ushered in or accompanied by fever; (5) persistent, although probably not very intense, pains in the epigastrium. The aim of the operation is to fix the site, nature and degree of the lesion and then cure it beyond the possibility of recurrence, when practicable. Often several attempts are necessary. The following must be taken under con-

sideration: (1) Primary or secondary cystotomy. The primary method appears to be more and more in favor because with it it is possible to remove the greatest number of stones. (2) Cysticotomy. (3) Choledochotomy. (4) Anastomoses. (5) Ablation of the gall-bladder, the most radical method of cure, but beset by so many dangers as to be rarely resorted to, except in extreme and carcinomatous cases. His own results have up to the present been satisfactory. Fistulæ imply no danger as a rule and heal spontaneously, although slowly. Recurrence appeared in but one case and seemed attributable to the presence of another inflammatory invasion of the gall-bladder and ducts with colic.

Juergens, at the Berliner medicinische Gesellschaft, July 18, 1900, said that in virtue of his report two years ago of having found definite organisms in the bronchi and in and about the tumors of a case of carcinoma of the lungs, he had subjected the matter to further and careful investigations. Above all other things the author denies the truth that the blastomycetes have any causal connection with cancer as set forth by foreign and promiscuous observers. In his own researches he has to the utmost avoided the colorings giving occasion for artificial products. For the search after living organisms in his experience the fresh specimen either in a thin glycerin preparation or washed in safframin is best. His best results were in the heart of an anemic carcinomatous individual where he found (1) numerous small scattered cells very like those found in the lymph-channels very early in their involvement in secondary deposits; (2) small kernel-like bacteria colonies, situated among the discrete cells, some transparent, some large, some refracting the light, on the whole closely resembling the kernels of myxomycetes; (3) organisms with ameba-like processes; (4) various cyst-like organisms, similar to the spores of myxomycetes. All occurred not only among the heart-muscle bundles, but also in the cancer-mass and among the cancer-cells. He attempts no statement as to whether these organisms possess a causal relation to the cancer, but hazards the opinion that they indicate deep-seated and severe disease of the heart-muscle substance.

Siedentopf, at the medicinische Gesellschaft at Magdeburg, May 3, 1900, brought out the following points in regard to rupture of the uterus. As to the mechanics he considers the uterine wall with the onset of normal propulsive pains to be divided into two segments, active and passive. The active segment shortens, thickens, and hardens its wall, cramps its cavity and empties itself of its contents. The passive segment receives these contents by virtue of a gradual thinning of its parieties. When this thinning process has reached a certain degree the contents of the uterus can no longer be accommodated by it, the os uteri opens, the child's presenting part passes through and is born into the vagina. Should this progress of the conception-product be hindered the balance is lost and there occurs an abnormal stretching of the passive zone which may lead to a rupture. For the closer following of the anatomical processes and of the localization of the zones the author offers the results of external and internal examinations. In one case during a Cæsarean section he was able to establish the fact that the external palpable ring, in this patient navel-high, was indeed the contraction ring and upon section of the organ showed that it corresponded with the internal ring, thus differing from Sänger who claims that the external palpable is not the contracting zone or ring. Pressure-necrosis of the uterine substance between the pelvis and the presenting part, the author holds, is not essential to the rupture, because he has seen one rupture, entirely in the cervix, due to impacted transverse position without pressure-necrosis. In this opinion he differs from Freund. A second class of cases of uterine rupture constitute those which for pathological reasons suffer unusual thinning of the uterine walls and might be said to have a predisposition to tearing. A third series of cases comprise those which on account of faulty dilation of the os uteri are subjected to bandages and pressure bringing about cervical tears which extend to the vagina and thence to the pelvic or abdominal cavities. The symptoms indicating threatened rupture are, subjectively, anxiety and continued pain on account of the tension on the uterine ligaments; objectively, the presence of a uterine contractile ring, the stretching of the round ligaments and the character of the pains. Pain ceases as a rule after the rupture and the child is partly or wholly palpable in the abdomen near the uterus or impacted partly in the pelvis. Shock and signs of hemorrhage appear later. The prognosis is dependent upon the site, completeness and incompleteness of the tear, upon lacerations of large vessels and upon later sepsis. Treatment is prophylactic. Avoidance of external pressure to hurry the delivery, recovery of the child by laparotomy when possible, suture of the complete tear, expectant drainage of the incomplete rupture and all possible means to avoid or combat sepsis.

SPECIAL ARTICLE.

DISCUSSION ON TROPICAL DISEASES [1]

At the sixty-eighth annual meeting of the British Medical Association, held at Ipswich, July 31st and August 1-3, 1900, the Section on Tropical Diseases held the following interesting discussions:

Treatment of Malaria by Quinine.—Andrew Duncan in opening this discussion said that while he could not offer many new facts on the subject, he could corroborate those already known and add some fresh evidence in contradistinction to that previously in vogue as to its value in Africa. In regard to the prophylactic action of

[1] From advance sheets by courtesy of the *British Medical Journal*.

quinine, he cited a number of investigators of different countries, most of whom found fewer attacks of malaria in those soldiers who took small doses of quinine than in those who did not take the drug. Duncan's own results in 1889 were that there were fewer cases of malaria among those companies which took 3 grains of either quinine or cinchona daily than among those who took no drugs. In 1896 50 men took 3 grains of quinine and had not a single case of fever. Of the men of the same regiment who took no drugs 6.5 per cent. had malaria. In 1897 50 men took 3 grains of quinine daily and had no malaria, while the men of the regiment who took no drug had 9.8 per cent. of malaria. In the Malay war, in the Ashanti wars and in the West Regions of Africa the quinine proved of no benefit. The results of an inquiry by Mr. Chamberlain and Dr. Patrick Manson prove without doubt that quinine does exert a prophylactic action against malaria, being efficacious in 87.7 per cent. In comparing the prophylactic action of the quinine salts with that of other drugs, it has been found that the evidence concerning arsenic is very conflicting. Some experimenters secured complete immunity by arsenic, while others, Duncan included, have gotten no positive results. With reference to the curative action of quinine, Duncan finds from notes on 367 cases that this drug comes out best of all remedies, requiring the shortest time to stop the attacks and failing least often. In 78 cases quinine required on an average 2.11 days to stop the fever. The next most successful drug was Nim Bark. Berberis, Narcotine, Kreat, Indergao are other remedies mentioned in the order of their value, but none of them equalled quinine. In most cases the quinine was administered by the mouth. In those cases in which no result occurred after several days, it was given by the rectum in 20-grain doses as well. This method nearly always resulted in a cure, and is highly recommended by Duncan. The quinine probably destroys the organism. W. J. Buchanan said that the prophylactic action of quinine and of the other preparations of cinchona, was tested in 1894 in the jails of Punjab with such success that a similar trial of the drug was ordered the next year in all the jails of India. He had no hesitancy from his own experience in saying that the drug had the effect of certainly reducing the severity of the fever attack, although it did not prevent a large number of cases from coming into the hospital. Also that the incidence of fever was much less than among an unprotected community. He cited five experiments and their controls, all of which tend to show that the prophylactic action of quinine is marked. His experience also shows that daily doses of the drug can be administered for long periods at a time without any bad results. Dr. Robert Fielding-Ould said he had found a great diversity of opinion on the question of malaria and quinine when he was in West Africa. He discussed the action of quinine upon the blood and the amebæ. He does not agree with others as to the prophylactic action of quinine, for quinine does not *prevent* malaria, but only attacks the parasites when they are in an early stage of development. He believes that those who take quinine daily for long periods at a time, do so at the expense of their digestion, or with congestion and torpidity of the liver as a result. The best time to give quinine is when the parasites are about to sporulate, or are in their earliest stage. It may be given in a full dose of 15 grains by the mouth, or 3 grains of the hydrochloride hypodermatically. He called attention to the great value of the rectal administration of the drug. If 30 to 40 grains are injected into the rectum in a little water or mucilage of starch, after an enema, the drug is rapidly absorbed and appears in the blood in 10 or 12 minutes. Fielding-Ould thinks that a malaria patient is a standing menace to the health of the community as long as he has parasites in the blood. The drug should be given for some weeks after the fever has gone and until the microscope fails to find parasites in the blood. Dr. Patrick Manson thought that the prophylactic action of the quinine was the application of the drug to the parasite and not an immunizing of the body against the entrance of the parasite. Therefore if it will cure malarial infection it will prevent its development. David C. Rees said that when quinine is administered by injections, these should be intra-muscular and not hypodermic, and if given with antiseptic precautions no sloughs should result. He believes in taking 2 grains of quinine three times a day as a prophylactic.

Filaria Sanguinis.—A paper on the metamorphosis of the *filaria sanguinis hominis* in mosquitoes, especially in the *Anopheles Rossii* and other mosquitoes of the *anopheles* genus was read by S. P. James. He said he had found that from twelve to fourteen days are required for the metamorphosis in the *Anopheles Rossii*. He cited several interesting experiments on mosquitoes and describes the filariæ. A note on the etiology of filariasis was read by Lieut.-Colonel J. Maitland. Attention is called to the immunity of Europeans to this disease, although surely exposed to the bites of mosquitoes as much as the natives. Water may be the means whereby the filaria enter the human system, especially water obtained from shallow wells or pools. The immunity of the European in India is believed to be due to his drinking only boiled or filtered water. It is possible that the young filaria may pass from the mosquito's proboscis into the water and thence into the human system.

Hot-Weather Diarrhea of India.—Major W. J. Buchanan said that this is a very severe form of diarrhea with watery stools. It is not cholera but resembles it. The writer described the clinical picture of a case and reported several cases. As to treatment during the early stage no drugs should be given, and only such food as milk, boiled milk or prepared food, brandy or rum may be necessary. When the stools become fre-

quent and watery, the writer usually gives chlorodyne or camphoridyne, sometimes with small doses of brandy. When the diarrhea has become much less, castor oil will set the patient aright. The diet should be carefully watched. The causes are (1) bacterial and (2) predisposing. The latter are badly prepared food, bad food, improperly eaten food, overindulgence in food or alcohol, etc. The hot weather favors the production of intestinal fermentation and putrefaction. The disease must be differentiated in India from cholera. The diarrhea is not so fatal as cholera, and cramps are seldom present in the diarrhea.

Ankylostomiasis.—Major Y. M. Giles gave the history of this parasite up to 1889, and stated that of the many new points which he was able to bring out by his own investigations, by far the most important was the demonstration of the fact that the full life history of ankylostoma duodenale is an example of dimorphism or heterogenesis. He explained his experiments in detail, and gave a description of the parasite. The rhabdites have never been found by him in drinking, or in any natural collection of water. They were found in great numbers in the fouled soil around villages and hence he thinks that they are carried to food by soiled hands and that that is the commonest method of infection. Prolonged exposure to the direct rays of the sun kills the free stage worms, and burying the embryos also destroys them. They easily succumb to ordinary disinfectants. The writer believes that this parasite is responsible for a formidable mortality and a great amount of chronic illness.

Capt. C. F. Fearnside gave some interesting statistics as to the presence of this parasite in a large number of convicts. He also showed the effect on these entozoa of better hygiene and cleaner food. His figures tend to show that the effects of the ankylostoma are for the most part secondary and not primary. Dr. Leonard Rogers presented a long paper on the great differences of opinion regarding this disease, the sources of fallacy, the definition and classification of ankylostomiasis, its differential diagnosis and the types of anemia in ankylostomiasis and malaria. Oswald Barker said that he thinks that much of the mortality of Burmah, set down to unknown causes, to anemia and general debility, is due unquestionably to ankylostomiasis. He agrees with Major G. M. Giles that the commonest mode of infection is through the medium of contaminated food, and that water has little to do with the matter.

Tropical Liver Abscess.—Colonel Kenneth MacLeod said that spontaneous evacuation of abscess of the liver takes place most commonly by the pulmonary route. He discussed the physical signs produced by a primary discharge into the pleural cavity, and said that the cavity must be drained. He contends that in old standing cases of lung lesion consequent on hepatic abscess, the pathological burden has been transferred from the abdomen to the chest; and that the lung must be treated according to the special indications of the case, and the liver left to take care of itself.

Subhepatic Abscess.—James Cantlie considers this term to mean a collection of pus on the under surface of the liver, between the liver and its capsule, beginning most probably in the lymphatics. He divides abscesses of the liver into three kinds: (1) Intrahepatic abscesses, mostly of dysenteric origin; (2) suprarenalhepatic abscesses situated between the layers of the broad ligament of the liver, commencing as a lymphangitis; (3) sub- or infra-hepatic abscesses, in which pus lies between the liver substance and the capsule, commencing probably as a lymphangitis. He said that it is possible that the lymphangitis may be due sometimes to the results of filarial infection, as empty sheaths of filaria nocturna were found by him in one case of suprahepatic abscess. He was unable to state the reason why the pus selected this region. The few cases he had seen were in persons who had resided in tropical countries. The local signs and symptoms were a tumor in the epigastrium to the left of the gall-bladder and behind the right rectus muscle, perihepatitis with friction sounds showing an increased area from day to day, hepatitis was not marked, nor was the area of liver dulness much, if at all, increased. The general symptoms are some temperature, occasional rigors, generally paresis of the intestine, or loose bile-stained stools and disturbance of the circulation and of the thoracic movements usual in inflammatory changes in this region. The diagnosis of subhepatic abscess is sometimes difficult. Cantlie has found the prognosis good in the cases he has seen. The treatment consists of tapping with a large trocar and drainage with a tube, or incision when there are adhesions. Wm. J. Smith thinks that surgical interference is necessary both for therapeutical purposes, and also in a large proportion of cases to obtain a precise diagnosis. The diagnosis from symptoms presented is difficult. The exploratory puncture and the exploratory laparotomy are two surgical procedures in the radical treatment. Smith prefers the exploratory puncture, as it succeeds and is followed by no bad results. He uses a needle from 3 to 6 inches in length and a syringe with a capacity of 60 to 120 minims. When pus is demonstrated by the needle after 2 or 3 punctures an incision such as will permit the free discharge of the fluid and drainage should be made immediately. The only cases in which he would refrain from operating excluding those in which the patient is much exhausted and almost moribund, would be cases in which there had undoubtedly been a spontaneous rupture of the abscess into the right pleural cavity.

Amebic Causation of Abscess.—As all abscesses of the liver are of great interest Staff-Surgeon P. W. Bassett-Smith reported a case which occurred in England in a man who had not been abroad for two years. The hepatic abscess followed an attack of dysentery, and amebæ were abundantly found in the abscess fluid to the

complete exclusion of pyogenic bacteria. After death recent shallow (probably amebic) ulcers were found in the cecum. The abscess was in the left lobe of the liver. There was an abscess in the right lung which did not directly communicate with that of the liver. The lung was infected without perforation of the serous membrane. There was pericarditis. *Amoeba coli* was found in the abscess fluid two days after the operation, and the pus was sterile. It is probable that the dysentery was directly due to the ameba and that these were conveyed to the liver.

Improvement of Sanitary and Medical Practice in Tropics.—In this paper Ronald Ross called attention to some improvements in medical organization in the tropics which are much needed. He would have special instruction in animal parasitology and in tropical medicine given to all newcomers, and would have the facilities for obtaining literature on tropical medicine increased. Microscopes and other apparatus ought to be supplied the hospitals. There should be better municipal regulations, and original research should be stimulated.

Blackwater Fever.—Dr. George Thin reported a case of this disease and described his findings in sections of the spleen, liver, bone marrow, and kidney. He is satisfied that the patient died of acute malarial fever in which the hemoglobinuria was a concomitant symptom only. Dr. Patrick Manson said that while it may be quite true that hemoglobinuric fever is an expression of malarial infection, he would not decide that it was so merely because the malarial parasite was discovered in a hemoglobinuric's blood.

Cyprus Sphalangi and Anthrax.—George A. Williamson described this insect, which is about the size of an ant, and gave a complete identification of it. The *sphalangi* is met with only during hot weather. Its body is covered with fine hairs which may be the means whereby it carries infection to abraded surfaces. It prefers foul material as food. In early summer winged individuals are met with. The females can and do sting, but the sting in itself is not supposed to be especially poisonous. In Cyprus the sphalangi bite is considered serious, and possibly fatal. Anthrax is common on the island and the carcasses of sheep dying from it are left too often lying where they died. Williamson reported in detail several cases of "sphalangi bite" in which he found large numbers of undoubted anthrax bacilli in the discharge. In all these cases there was a history of a sheep having died of anthrax in the immediate neighborhood a few days before the patient was bitten. He also noted several cases of sphalangi bites in which there was no infection other than one would expect from the simple bite of the insect. Therefore all bites of the sphalangi are not poisonous, only those which carry the anthrax bacilli upon their sting or on the hairs on their body.

Yaws.—Jonathan Hutchinson opened a discussion on yaws, and presented a young man who he believed was the subject of the disease. The patient presented a number of scars and pigment-stained patches, chiefly on his lower extremities. Hutchinson believes that yaws is syphilis modified by race and climate, and that yaws protects from syphilis and vice versa. Dr. Patrick Manson said he did not believe that inoculation by yaws will protect against syphilis nor vice versa.

SOCIETY PROCEEDINGS.

THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

Held at Paris, August 2-9, 1900.

(Continued from page 397.)

Section on Dermatology and Syphilography.

Eczema and Its Parasites.—Dr. P. G. Unna of Hamburg thought that much of the difficulty in the diagnosis and proper understanding of this affection was due to the absence of any proper classification of the bacterial organisms. He believes that the disease is due to a micrococcus and that a more persistent study of the staining properties of the various associated micrococci would result in the unraveling of the question. Dr. James Gallaway of London spoke of the uncertainties of diagnosis from a clinical standpoint and also of the need that existed for more strictly scientific descriptions of the many lesions usually spoken of as eczematous. In working with one particular type of disease, acute papulo-vesicular eczema, he has obtained, by working on four cases, a coccus which was found in all. These cocci were pathogenic for mice and were closely allied in their cultural characteristics. He concludes that cocci which produce white colonies are found in early and uncomplicated cases of papulo-vesicular eczema, but they cannot be differentiated from staphylococcus pyogenes albus. Later stages of the disease frequently gave the aureus. Dr. Unna's coccus, he believed, was in the former group. Other important factors should be considered. The predisposition of the skin, usually associated with seborrhea, as well as disturbed bodily metabolism were factors not to be ignored. Dr. Jadassohn of Berne thought that the micro-organisms so constantly found were not pathogenic; their presence was accidental. Their development later undoubtedly gave rise to many secondary lesions in the affected areas. Drs. Brocq and Veillon of Paris concurred in that they did not believe that any specific bacterium had been found for the disease; the principal lesion of eczema, the vesicle, was usually sterile and that the complicated later picture of eczema was induced by the secondary infection of the different cocci described by numerous authors as the causative factor of the initial lesion.

Tuberculides.—Dr. Boeck of Christiania called

attention to the peculiar character of a number of cutaneous affections occurring in tuberculous patients. These were probably due to the effects of the toxin of the bacillus tuberculosis acting on the vasomotor nerves. The bacillus itself was almost uniformly absent. The affections were marked by their symmetrical development, in marked contrast therefore to the asymmetry of affections due to the growth of the bacillus itself. Dr. Campana of Rome spoke of the resistance of the skin to the inroads of the bacillus and its ready involvement by the toxins of this organism. He accounted for this on the ground that the bacillus tuberculosis was a better aerobe than anaerobe and that while the structure of the skin had little to do with the problem, its lack of oxygen had. To distinguish clinically, however, between the lesions of the bacterium and those of its toxin was a very difficult matter. Dr. Darier of Paris enumerated some of the clinical features of the tuberculides. They were symmetrical in their development; were always associated with patients infected with Koch's bacillus; they usually appeared suddenly without any rise in temperature; they were usually of a reddish-purple or livid tinge, and might be found in almost any portion of the body. Moreover, they were tender to the touch, although not painful and were liable to be found under various guises and capable of many modifications in their developmental history. In order to account for them three hypotheses have been given, in the last of which Dr. Darier was inclined to believe. (1) Unknown micro-organisms living in a soil first prepared by the development of the tubercle bacillus produced them. (2) They were brought about by the action of the toxin of the tubercle bacillus. (3) They were the results of multiple emboli of the tubercle bacilli.

Syphilis.—Dr. Bulkeley of New York spoke of syphilis associated with other infections. Thus far the conditions were little studied and he advocated a more careful inquiry into the effects that followed from coincident infections when the second disease was local as well as general.

Dr. Ducrey of Pisa divided these combinations into three classes. Those in which the second infection was purely local and gave no general symptoms; those in which the second infection was usually local, but might give rise to general infection, gonorrhea, for instance, and finally those in which the second disease was general, such as leprosy or the infectious fevers. With purely local conditions he believed that they increased the gravity of the specific lesion. Thus when the soft sore is associated with the hard chancre, suppuration and gangrene are much more liable to occur. The infectious fungus diseases were thought to flourish better on a syphilitic soil. As far as gonorrhea was concerned he did not believe that there was any particular effect one way or another, save perhaps on the occurrence of a gonorrheal epididymitis which predisposed the organ to syphilitic invasion. In the eruptive fevers, the coincidence of syphilis and measles and scarlet fever seemed to result in a heavy mortality. This might have resulted from the bad hygiene rather than the syphilis. Ducrey believes that typhoid fever destroys the syphilitic virus to an appreciable extent. Erysipelas seems to have somewhat of the same effect. Puerperal septicemias are badly affected by syphilis, as are also the association of syphilis and tuberculosis and syphilis and malaria. Syphilis and leprosy seem to have no interaction, the one on the other.

Dr. Hallopeau of Paris believed that it would be wise to limit the term "associated diseases" to those in which a modification was brought about by the action of the syphilitic virus. He believed in hybrid forms of disease produced by such interactions. Such could be brought about by the soft chancre, tubercle bacillus, rarely, and epithelioma.

Syphilis and Heredity.—Dr. B. Tarnowsky of St. Petersburg traced the histories of 25 syphilitic families to the fourth generation. He concludes that (1) the second generation suffers the most from the effects of hereditary syphilis; miscarriages, stillbirths, early deaths and general malnutrition were the chief effects induced; (2) the third generation suffers, but in a markedly diminished degree; (3) immunity to the syphilitic virus is not transmitted to the third generation and the diseases recognized as due to congenital syphilis are not present; (4) syphilis of father or mother acquired at the time of conception or during pregnancy is not transmitted as hereditary syphilis to the offspring; (5) the skipping of one generation was not observed; (6) if the children of syphilitic parents do not show signs of congenital syphilis they have perfectly healthy offspring; (7) hereditary syphilis of the third generation is as a rule reinforced by a second infection in the second generation; (8) such a double infection makes more havoc with the third generation than does the primary trouble with the second; (9) to this "binary" syphilis is to be ascribed the baneful degenerative effects seen in endemic syphilis; (10) the effects of the syphilitic virus run out entirely in the fourth generation. Dr. E. Fenger of Vienna does not think that enough attention has been given to the question of reinfection in the second generation in attempting to analyze the occurrence of the disease in the third. Most, if not all, cases which show third-generation invasion will be found to have had second-generation reinfection. Syphilis seemed to exert its greatest force in limiting the number of progeny rather than decreasing their resistance and thus carried out the natural survival law. With reference to the question of immunity among syphilitics he believed that it was much less than had been supposed. Its comparative mildness in endemic localities and great virulence on virgin soil were facts not to be gainsaid, but they did not necessarily prove the fact of acquired immunity.

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ORIGINAL ARTICLES.

STUDIES IN SURGICAL TECHNIC, WITH A REPORT ON OPERATIVE SURGERY AT THE CITY HOSPITAL FOR 1898 AND 1899.

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IN April, 1896, the writer presented to the Harvard Medical Society of this city a paper entitled "Operative Surgery at the City Hospital, with a Preliminary Report on the Study of Wound Infection." This communication consisted of a record of the operative work occurring in my first service of six months in that institution, together with a report of a more or less systematic series of experiments undertaken during that period, with a view to improving the surgical technic of the hospital.

That the surgical technic needed improvement will be evidenced by the fact mentioned at the time, that during the first month of this service, of 43 cases operated on for various diseases and injuries, not one clean case escaped infection, and in only seven of the patients already infected did the operative procedure result in wounds which healed without suppuration. As these results were probably the worst ever published, and certainly far worse than any previously observed by the writer, a rigid investigation was at once undertaken to account for, and if possible to correct this unfortunate and mortifying state of affairs.

It should be stated, however, that at this time the hospital operating-room was small, badly lighted, badly ventilated, and wholly unprovided with modern appliances; that there was no apparatus for the proper sterilization of ligature and suture material, and no modern autoclaves for sterilizing dressings, gowns, etc., under live steam. In addition to these disadvantages, our house staff by the system of rotation then in vogue, changed every six weeks, the house surgeon only having had a previous surgical experience of six weeks as junior.

After a brief period of investigation, a large number of errors in technic were discovered, among the most important of which may be mentioned faulty methods of hand disinfection, faulty method of disinfecting the wound area of the patient, rough handling of the divided tissues during operation, frequent contamination of hands, sponges, towels and dressings, through lack of training of the operator and assistants, contamination of the wound by falling dandruff during operation, and by insufficient protection by dressings during the period of convalescence.

These and many other minor errors were gradually corrected during the remaining five months of the service, with only a fair improvement in result, until at last the method of operating without any assistance was undertaken in a few selected cases. The result in these cases was perfect; in each instance union taking place by first intention. Then followed a number of cases in which one assistant was admitted; later two, and finally three. In addition to this a censor was appointed, whose duty it was to watch every step of the operation and to instantly condemn any hand, instrument, sponge, suture or dressing which had become accidentally contaminated. In this way a large number of errors were avoided, and the results began to show substantial improvement. The year closed with a record of 39 per cent. of clean cases having become infected during operation.

In reviewing the results at the close of the paper, the writer made the following statement: "As a large proportion of the patients admitted to our wards are in a wretched condition of malnutrition from syphilis, tuberculosis, chronic alcoholism and insufficient food, it is not surprising that our results should be inferior to those obtained in institutions where the more fortunate classes are treated; for it is a well-known and generally accepted fact that a vigorous and healthy organism can often overcome, without local or general reaction, an amount of infection which would certainly give rise to suppuration and marked systemic disturbance in one whose vital forces were greatly reduced by dissipation or disease. While the writer believes that this fact may account for a certain amount of suppuration following operations on clean cases, it by no means can account for the large number of infections which occurred during this period. I may say, in conclusion, that it is my purpose to continue these experiments, and if necessary inaugurate a series of bacteriological investigations with a view to locating and removing any other sources of wound infection which up to the present may have escaped detection; after which it may be possible to gather some data, which may help to solve the question of how much (if any) unavoidable suppuration may be expected in this class of cases."

As a result of our changed technic the work of our second year showed at once a marked improvement in results. During this period the Department of Charities, as a result of an earnest appeal from our Medical Board, furnished the Hospital with two new perfectly equipped operating-rooms with all modern appliances. A

complete sterilizing room was added with 3 Sprague-Kny autoclaves, instrument-boilers, water-sterilizers, and in fact everything necessary to equip a modern operating-room. An operating-room nurse, trained in the Johns Hopkins Hospital, was secured and placed in charge. At the same time, to test our new apparatus, and to detect further errors in our technic, a thorough bacteriological investigation of our material and methods was undertaken and thoroughly carried out by Dr. Phillip Hanson Hiss of the Pathological Laboratory of the College of Physicians and Surgeons.

A complete record of these investigations, together with the changes in our technic which resulted from them, was presented to the surgical section of the New York Academy of Medicine in a paper entitled "Operative Surgery at the City Hospital with a Completed Report on the Study of Wound Infection," and published in the *Medical Record* of March 13, 1897.

As a result of our bacteriological investigation it was conclusively demonstrated that our material, such as silk, catgut, sponges, dressings, towels, gowns, caps, etc., was absolutely sterile; that our instruments were clean; and that our methods were free from any glaring errors in technic. The three most probable sources of infection still to be remedied were, the skin of the patient, the hands of the operator and his assistants, and the air of the operating-room. The second was completely removed by the adoption of rubber gloves; the third was minimized by the plan of covering all instrument trays and hand solutions with sterilized muslin tents supported by wire frames. Many methods were employed to remove the first, but without any proving bacteriologically satisfactory. Toward the close of the year, the following rules were printed and posted in the operating-room and in each surgical ward of the hospital. These will serve to give a general idea of our methods.

Preparation of Patient.—When possible, a hot bath shall be given the day before the operation, followed by shaving and scrubbing the part for two minutes; soap poultice over night. The following morning, rescrubbing for ten minutes, after which a wet bichloride gauze dressing shall be applied (1-1000); this to be done only by the head-nurse in the ward, after thorough sterilization of the hands.

On the operating table, the dressings shall be removed and the part washed by the house surgeon, for one minute, with soap and sterile water, a pledget of sterile cotton being used instead of a brush; then douched with alcohol, ether and sterile water. Sterile dry towels to be used around wound area. The operator, his assistants, and the operating-room nurse shall wear freshly sterilized gowns. Gauze caps shall be worn in every aseptic case by those in immediate contact with the wound area.

The hands of the operator, his assistants, and the operating-room nurse shall be prepared in the following manner: After cleansing the nails with soap, hot water, and a sterilized nail-cleaner, the hands and arms must be brushed for five minutes with sterilized soap and hot water, then brushed for one minute with a 3 per cent. solution of carbolic acid in alcohol, and rinsed in sterile water. Sterilized rubber gloves shall be worn by all participating in the operation. The ligature and suture material shall be removed from the bottles and handled only by the senior assistant surgeon; dressings and sponges only by the operating-room nurse.

The head nurse of the ward shall superintend the moving of the patient, the adjustment of the blankets and other unsterilized coverings, assist the etherizer, and be prepared when necessary to assist or take the place of the operating-room nurse.

No departure from these rules will be allowed without the permission of the house surgeon.

As a result of these changes, our records during the second year show substantial improvement, as the infection of clean cases during this period was reduced to 9 per cent. The work of our third year was largely devoted to overcoming the results of air infection, which from our bacteriological experiments we felt was a factor at least in some of the infections which had occurred during the previous year.

The favorable effect of glutol or formalin-gelatine powder had been noted in a series of badly infected wounds which had been treated by this agent, and it occurred to the writer that some other form of formaldehyde might be employed as an antiseptic agent in wounds which had been exposed to the air during long operations.

To verify certain statements in regard to the antiseptic properties of formaldehyde gas which had been published in France the writer made the following experiment:

A room was selected in the hospital, the air of which was known to be badly infected. The capacity of the room was about 2800 cubic feet. In this were placed a large number of test-tubes containing gauze soaked with pus from suppurating wounds, also tubes containing spore threads contaminated with *bacillus subtilis* obtained at the pathological laboratory of the College of Physicians and Surgeons. These were placed at a number of levels and more or less completely imbedded in masses of gauze, towels, sheetings, etc. The room was closed as tightly as possible and formaldehyde gas passed through the key-hole in the door from a Trillot generator for one hour. Three hours later the room was opened and the various pieces of pus-soaked gauze and the spore threads transferred to bouillon-tubes; also, scrapings from the floor, sidewalls, window-sills and board-shelves, and the tubes sent to Dr. Hiss for incubation. No growths were obtained in any of the tubes thus inoculated, conclusively demonstrating the powerful antiseptic properties of formaldehyde gas.

The next experiments were in the sterilization of acutely infected wounds with solutions of formalin. This was used in the strength of 1-300

to 1-50 of water, as an irrigating fluid, and also for soaking gauze which was used as a wound packing. Experiments were also made with formalin as an agent for hand and skin disinfection, and finally the plan adopted of wiping all operating wounds with gauze sponges wet with this agent just before suturing, and applying a strip of wet formalin-gauze over the sutured wounds before applying the ordinary dressings.

All of these experiments were reported in detail in a paper read by the writer before the Surgical Section of the Suffolk County Medical Society in Boston, in March, 1898, entitled "Some Observations upon Modern Surgical Technic from an Analysis of 421 Operative Cases at the City Hospital."

As a result of these improvements in our technic, the writer was able to report, at the close of his third year, infection in only 7 per cent. of his clean operative cases.

During the years 1898 and 1899 the writer was on duty 13 months. The total number of operations occurring in his service was 358, which may be classified as follows: Operations on the head, 27; on neck, 22; on thorax and spine, 22; on abdomen and pelvis, 60; on upper extremity, 18; on lower extremity, 117; ischiorectal region, 52; on hernias, 40.

Of the 27 operations in the head, there were 10 osteoplastic resections of the skull for intracranial disease, of which seven recovered and three died. Four for necrosis of lower jaw, all recovered; one excision of upper jaw, recovered; one excision lower jaw, improved; two epitheliomata of lower lip, one recovered, one improved; two excisions of tongue and floor of mouth, one improved and one died; one excision of tonsil, floor of mouth and part of lower jaw, died; one Hartley-Krause operation for removal of the Gasserian ganglion, recovered. Two fractures of lower jaw, wired; one epithelioma of face and one of ear—all recovered.

As the 11 operations upon the brain have already been reported by the writer, with a number of others, in a paper entitled, "Some Observations on Modern Cerebral Surgery," none of the cases of this series will be mentioned in detail.

Of the 22 operations on the neck, there were 3 for abscess, 12 for tuberculous glands, 1 for hematoma, 2 for tumor, 1 sarcoma, and 1 cyst of thyroid, 2 exploratory incisions, 1 for inoperable sarcoma, and 1 for supposed carotid aneurism; 1 ligature of common carotid and 1 tracheotomy for carcinoma. Of these 17 recovered, 2 were improved, and 3 died. Two of the three deaths occurred in patients who were practically moribund at the time of the operation; one of these was tracheotomy in the last stages of carcinoma of the throat, and the other was a ligature of the carotid artery to check hemorrhage in a large ulcerating sarcoma of the neck.

Only one operation of this series deserves special mention and that was in a case referred to the surgical service by Dr. C. C. Ransom, Visiting Physician to the Hospital, with a diagnosis of aneurism of the common carotid artery. The case presented nearly all of the characteristic symptoms and signs of the disease. There was a slight bulging with visible pulsation at the root of the neck on the right side under the lower portion of the sternomastoid muscle. Upon examination a small deep-seated tumor could be felt with distinct expansile pulsation when the thumb was placed at the outer border of the sternomastoid muscle just above the clavicle, and the first finger pressed deeply in the suprasternal notch, the two being then separated about two inches. The patient complained of slight pain with a disagreeable sense of throbbing which often prevented sleep. Under ether anesthesia an incision was made along the inner border of the sternomastoid muscle, and the artery exposed. No aneurism was found, but there was a peculiar and quite unusual anomaly present. The right subclavian artery arose from the junction of the ascending and transverse portions of the arch of the aorta, and passed upward and outward in the direction of the innominate; about one inch to the left of this branch was a large trunk given off from the middle of the arch, which was found to give origin to the right common carotid and the left common carotid and subclavian arteries. The right common carotid described a double curve similar to a letter S, obliquely placed, the first and lower curve with its convexity pointing inward, occupied a position in the suprasternal notch; the second and upper curve, with its convexity pointing outward, was placed above the clavicle, partly behind and partly to the outer side of the sternomastoid muscle. From this point the artery pursued a direct course upward to its bifurcation. The patient recovered from the exploration.

There were 22 operations on the thorax and spine; one case of carcinoma of both breasts, double Halsted operation; two laminectomies—one for fracture and one for Potts' paralysis; two resections of clavicle for deformity following fracture; three cases of mastitis; one axillary abscess; one exploratory operation for caries of spine; one Van Hook's operation for sacro-iliac disease; nine resections or ribs, of which 3 were for empyema, 2 for abscess of lung, 1 for subphrenic abscess, one Estlander's operation and two for exploration; one excision of a large carbuncle of back. Of these 15 recovered, one was improved, 2 not improved, and 4 died; the 4 deaths being the 2 laminectomies, 1 following operation for empyema, and 1 for abscess and gangrene of lung.

Of the 60 operations on the abdomen there were 48 laparotomies. Of these there were 9 appendectomies, 4 cholecystostomies, 1 cholecystectomy for carcinoma, 2 intestinal anastomoses, 2 gastro-enterostomies, 1 gastrostomy, 4 colostomies, 7 for ventral hernia, 1 for tuberculous peritonitis, 2 hysterectomies, 2 salpingo-oophorectomies, 3 for intra-abdominal abscess and 1 for a ruptured ectopic gestation, 1 nephrectomy, 2 nephrotomies, 1 nephrorraphy, 1 suprapubic

cystotomy, 1 large retroperitoneal abscess, 4 for cellulitis and 2 uterine cases.

Of the 48 laparotomies there were no deaths from operation, and in only 2 did death occur during the period of observation, and these were both cases of advanced carcinoma. Death followed operation in two cases of extensive and neglected pelvic suppuration opened externally, and in one case of exploratory nephrotomy where multiple abscesses of the kidney were found.

As a number of interesting cases of this series has already been reported in the *Annals of Surgery*, and as a report of the gall-bladder operations is reserved for another occasion, the writer will mention but one case in detail.

This patient was referred to the writer by Dr. Joseph Collins, attending physician to the hospital. A male, aged thirty-two years, complained of pain in the left side of the chest and abdomen, cough, shortness of breath and fever; duration three months. Upon examination there was seen an enlargement of the left half of the abdomen, extending from the crest of the ilium, upward behind the ribs, and causing a marked bulging of the lower left side of the thorax. This enlargement was found on palpation to be due to the presence of an enormous tumor, occupying the entire left half of the abdomen which was smooth, dense and moderately elastic. An aspirating needle withdrew moderately thin pus. Under chloroform anesthesia an incision was made in the left flank parallel with the lower rib, and the tissues divided through the lumbar aponeurosis. Just beneath this structure was found a thick fibrous mass suggesting a cyst wall. This was incised and about a gallon of pus was evacuated. The wound was thoroughly drained, dressings applied, and the patient placed in bed. All symptoms were at once relieved, and the wound was regularly irrigated and dressed for two or three weeks. As the discharge persisted and the patient's condition did not improve after the first marked relief, he was again anesthetized and the kidney and cyst wall removed through a large König's incision. The vessels and ureter were ligated with chromicized catgut, the wound closed by layer sutures and a small gauze drain introduced. The patient made an uninterrupted recovery and has since been well. An examination of the specimen showed it to be an enormous suppurating cyst developing from the cortex of the upper pole of the kidney and not communicating with the pelvis.

Of the 18 operations on the upper extremity, there were 2 excisions of the elbow, 1 excision of a metacarpal bone, 4 amputations of the arm, 1 at the shoulder, 1 suppurating arthritis of the elbow, 2 cases of cellulitis, 1 lengthening of tendon, 1 neurosis, 2 wiring of ununited fractures, 1 ankylosis of elbow, 1 old dislocation of the shoulder, and 1 chronic relapsing dislocation of the shoulder. There were no deaths in the series; 14 were discharged cured, 2 improved, and 2 not improved.

Of the 117 operations at the lower extremity, there were 28 amputations, of which 3 were at the hip, 9 of the thigh, 4 of the leg, and 12 of the foot or toes; 5 excisions, 2 of the knee and 3 of the ankle; 5 arthrotomies of the knee, 4 for suppurative synovitis and 1 for the removal of a loose cartilage; 1 arthrotomy of the hip; 1 suture of a ruptured tendon of the quadriceps extensor; 7 cases of hallux valgus; 1 exploratory operation for tumor of thigh; 1 excision of a sarcoma of the ilium; 1 tumor of the buttock; 1 wiring of an ununited fracture of the femur; 1 flat foot; 1 case of multiple typhoid osteo-myelitis; 1 tenotomy; 8 for neurosis; 8 Tiersch skin grafts; 17 cases of cellulitis and 29 cases of varicose veins of the leg. There were 6 deaths in the series of 117 cases; 1 occuring 6 weeks after amputation of the hip, suddenly at night without known cause, as the wound was healing kindly; 1 following amputation of the thigh; 1 of the leg and two of the foot. In the sixth case death from uremia followed a simple operation on varicose veins; 11 of the series were unimproved as a result of the operative intervention; 5 were improved and the remaining 95 were discharged well. Of the three cases of hip amputation two recovered, and have been reported in the *Annals of Surgery*. Fowler's operation was employed in the 7 cases of hallux valgus—all with satisfactory result. In the case of multiple osteomyelitis following typhoid fever, there were 2 foci in each tibia and one in the femur opened; 4 healed promptly and one after prolonged drainage. In the case of sarcoma of the ilium, the entire ala was removed down to the ring of the acetabulum. This extensive wound healed very slowly, but the patient was finally transferred to another service on account of a lung tuberculosis and died about six months later without a recurrence.

The arthrotomies of the knee furnish an interesting series. The four cases of suppurating synovitis were all opened freely, washed out and drained; all recovered with a fair degree of motion. The one for the removal of a movable cartilage became infected and later submitted to an amputation of the thigh. This case will be referred to later in our report on asepsis.

Of the 52 operations on the ischiorectal region there were 19 for hemorrhoids, of which 3 were treated by the Whitehead method, 3 by ligation and excision, and 13 by clamp and cautery. There were 20 cases of ischiorectal suppuration, with 8 fistulæ leading into the bowel; 1 fissure ani; 1 inguinal adenitis; 4 ulcers of rectum; 1 prolapse of rectum; 1 hematoma of scrotum; 1 varicocele; 2 hydroceles; 1 tuberculous testes; 1 suppurating epididymitis; 1 external urethrotomy for extravasation; 1 carcinoma of vulva, and 1 carcinoma of rectum (Kraske's); the last case resulting fatally, being the only death of the series.

Of the 40 hernias operated upon, 37 were inguinal and 3 femoral; of the inguinal, 27 were operated upon by the Bassini method; 7 by the Halsted and 3 by the Phelps. Two of the fem-

oral were for radical cure and 1 was for the relief of strangulation. All of these patients recovered, and will later be reported in a series of 100 by the writer.

As there had been during the last four months of 1897 no case of infection in a clean operative wound, although 43 such cases had been operated on, it was hoped that our results during 1898 would be such as to enable us to present a report of which we might be justly proud. We had excluded all sources of infection through ligature and suture material, instruments, dressings, towels, sponges, and irrigating fluids. We had avoided absolutely contact of bare fingers with wound area or anything which could come in contact with it. We had guarded against falling dandruff or dust from our heads, we had protected our instrument trays, hand solutions, water pitchers and irrigators; we had employed the most systematic and thorough methods of sterilizing the wound area; we guarded every step of our operation by an ever vigilant censor, and, at last, to overcome any possible air infection, just before closing each clean wound, we carefully wiped it with a sponge wet in 1-50 formalin, and after suture the wound was still further protected with a strip of gauze wet in the same solution. In addition to this our entire staff was enthusiastic. Each one watched the others for the slightest error in technic and the fullest criticism was invited and welcomed. A stitch-abscess was immediately made the subject of the fullest inquiry, and anything more serious resulted in our suspending all operative work until a satisfactory explanation could be obtained.

During the first month of this year pus appeared in only one clean operative wound, and that is not recorded as an error of operating-room technic, as it was expected and provided for. The patient was an exceedingly old and feeble woman with an advanced epithelioma of the leg. Her condition would not permit of her being prepared in the usual thorough manner and on the operating-table everything was sacrificed for speed of operation. The thigh was amputated at the junction of the upper and middle thirds; the vessels secured, only three or four sutures introduced, the rest of the wound being generously packed. She made a rapid and satisfactory recovery, although pus was present from the first dressing in the drain opening, which nevertheless closed rapidly. Shortly after this a wound made by my house surgeon for the removal of a varicosed vein suppurated; probable exciting cause, excessive bruising and tearing of the subcutaneous tissues. The following month a stitch infection occurred in an internal appendix case operated upon by the writer, without known cause. During August of this year five cases became infected; a veritable storm of infection. It was thought that this might be due to contamination of the wound by our gloves by perspiration, as the weather was excessively hot, or through contact with flies, which was occasionally noticed. Two others occurred during the last three months of the year, making 9 in 105 clean cases, or 8½ per cent.; 1½ per cent. higher than in 1897.

Although the writer had fully intended to make his usual report this year, the results were so disappointing, and after four years of conscientious and almost unceasing effort, so utterly discouraging, that the report was never written. By a careful analysis of the infected cases, it was seen that 8 of the 9 cases occurred in hernia or varicose-vein wounds, both areas difficult to disinfect, while in the former the tendency toward the formation of dead spaces and accumulation of blood and wound fluids renders infections very probable; while in the latter, the hypertrophy of the skin not infrequently retards repair.

These facts led to a slight change in our technic in these cases to insure better drainage. This consisted in suturing the upper and lower thirds of these wounds only, leaving in the middle third a gauze drain which extended upward and downward under the sutures and projected in the middle well above the wound edges. One or two provisional sutures were then introduced in the drained middle third. At the end of forty-eight hours the wound was dressed, the gauze drain removed and the edges united by the provisional sutures.

The results were strikingly satisfactory; as our records for 1899 show, that out of 96 clean operations, only 3 became infected, and in two of these our usual technic was not carried out. The first case was a serious one and I blame myself for the result. The patient was a healthy man, fifty years of age, who had complained of symptoms of a movable cartilage in the right knee joint. He readily consented to an operation for its removal and was prepared in the usual manner. Recognizing the seriousness of an infection of the knee-joint, as well as the susceptibility of its synovial membrane to infection, the utmost care had been exercised to avoid any error in technic. After the patient was anesthetized and on the table, and all of the assistants were ready, in drawing my thin rubber gloves on my hands one was badly torn and rendered entirely useless. I asked for another pair, but was told that none were available. At first I determined not to proceed with the operation, but later changed my mind, as all of the assistants were properly gloved. I again thoroughly disinfected my hands by the Fürbringer method, and proceeded with the arthrotomy. No error in technic was observed; the joint was quickly closed, a large aseptic dressing applied and the leg encased in a plastic cast. All went well for 36 hours, when a suspicious rise in temperature occurred, which was soon followed by other symptoms of infection. The joint was freely opened and drained, but in spite of all our efforts a rapidly developing sepsis occurred requiring amputation of the thigh.

The second infection occurred in a hernia wound which was tightly united without drain-

age by my house surgeon, who feeling sure of his technic asked permission to try one case by that method. The third was simply a small stitch abscess which occurred in a varicose-vein case operated upon by another house surgeon, in which the record does not mention whether it was drained or not.

To briefly sum up the results of our five years of work at the City Hospital: First year, number of operations, 147; deaths, 8; mortality percentage, 5.4 per cent.; infection occurring in clean cases, 39 per cent.

Second year, number of operations, 109; death-rate, 8.2 per cent.; percentage of infection in clean cases, 9 per cent.

Third year, number of operations, 165; death-rate, 9 per cent.; percentage of infection in clean cases, 7 per cent.

Fourth year, number of operations, 191; death-rate, 6.2 per cent.; percentage of infection in clean cases, 8.5 per cent.

Fifth year, number of operations, 168; death-rate, 7.1 per cent.; percentage of infection in clean cases, 3.2 per cent.

From these observations, the writer feels justified in stating, in answer to the inquiry made at the close of his first report in 1896, as to how much unavoidable suppuration must be expected in this class of patients, that, if our technic is perfect, none should be expected, and while he is willing to admit that the resistance of these individuals is doubtless greatly reduced, and that visible infections will occur from a very much smaller amount of infective material than in healthy organisms, still by a perfect, though perhaps an exaggerated system of technic, our results at the City Hospital may be made as perfect as those at any other institutions.

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TOXICITY VERSUS SEPTICITY IN THE INFECTIOUS PATHOGENIC BACTERIA.

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It is now a well-established fact in bacteriology that the pathogenic organisms are hurtful to the animal economy through the action of certain toxins, the product of their physiologic development, which are absorbed from the seat of their colonization and affect the system through the circulation; that these toxins are also elaborated during the growth of the bacteria upon artificial media and may be extracted therefrom in a comparatively pure state; and that, when introduced into the blood of animals susceptible to their influence, they produce the symptoms which characterize the infections with these bacteria. Also, that the infecting bacteria may prove hurtful through their presence in the blood having invaded the circulation from the primary colony.

The former conditions are the "intoxications" and to the latter has been applied the term "septicemiæ," although this does not convey the meaning that the injury results from their active presence in the blood, for it is still from their elaborated toxins that the symptoms of disease are produced.

The classic intoxications are those of diphtheria, of tetanus and cholera Asiatica, in which infections the localized colony of the organism seems to play no further part than the production of toxin, which being absorbed produces the symptoms, the intoxication. In diphtheria the colony rests always at its primary seat, extending only upon the contiguous membrane; there is no invasion of the other tissues of the body, no septicemia; the organisms occasionally found in the adjacent tissues being the result of phagocytic carriage from the mucous surface involved. In this disease the presence of the colony excites a most wonderful local reaction, the leucocytes quickly forming a barrier of protection in the so-called "false membrane."

In tetanus and in cholera there is no such local reactionary collections of leucocytes. In the former the primary symptoms are developed in the nervous centers remote from the seat of infection; while in the latter, although the symptoms may be primarily intestinal, there is no general cellular formation, such as is found in diphtheria, nor does the presence of the bacillus in the intestine seem to determine the changes in the intestinal wall. There is no invasion of the circulation, no septicemia in these infections.

Influenza must in all probability be included in this class, although the isolation by Pfeiffer of his bacillus from the blood in some cases may demand that this disease be classed with the "modified septicemiæ."

The infections which develop septicemiæ more or less prominently are: Lobar pneumonia, due to the bacillus lanceolatus pneumoniæ; typhoid or enteric fever, due to Eberth's bacillus typhosus; "bubonic plague," or peste, due to the bacillus pestis of Kitasato; tuberculosis, due to the tubercle bacillus of Koch, and yellow fever, due to the bacillus icteroides, first isolated and assumed by Sanarelli to be the cause of this disease.

In pneumonia there is ample evidence in the "consolidation" of the development of an active chemotaxis, the toxins inducing a determination of the leucocytes to the seat of the primary colony in the lungs, although this attempt at limitation is not as perfect as that in diphtheria, and the bacillus is frequently found in the blood and other tissues, such as the meninges, pleuræ, peritoneum and pericardium, the result of septicemic invasion from the primary colony.

In enteric fever, in peste, and in yellow fever, this effort at protection, no doubt successful in many cases of pneumonia, is wanting. The localized colony gives little or no local evidence of its presence, but is productive of a primary intoxication of varying intensity, the local injury from which results in the passage of the organism into the circulation, the ensuing sepsis being characteristic of these diseases.

What, then, is this quality in some of the infectious pathogens which determines septicemia? And what the quality in others which limits their presence to the site of the original colony?

At present it is the extent of our knowledge that in the former there is no effort on the part of the leucocytes to form protective barriers in order to limit invasion; while in the latter such protection is afforded. These facts have been explained by the theory that the toxin produced, as well as the cytoplasm of the bacteria, exercises a positive attraction for the leucocytes which aggregate into the "false membrane," "consolidation," etc.; and on the other hand that there may be a negative chemotaxis, one resulting in a repulsion of the white cells, in their disappearance from the seat of invasion, and the consequent entry of the organism into the circulation, and the production of sepsis.

This positive chemotactic influence is not common to all the extremely toxic bacteria, since it is absent in tetanus and in cholera, in neither of which is there septicemia. Septicemia therefore does not depend on the presence or absence of the phenomena of chemotaxis, since two of the infections cited, presenting the evidence of positive attraction, are usually powerfully toxic and are limited to local infection, while two others equally toxic exhibit no attraction and yet are absolutely limited to the primary locality. Further than this there is no evidence of a negative or repulsive chemotaxis.

That there is a purely septic infection there is reason to doubt, that is to say, one as purely septic as diphtheria is toxic. The most recent studies in peste have demonstrated that in this disease we probably have the nearest approach to a purely septic infection;[1] and in typhoid fever the disease must be considered a "modified septicemia."[2] The presence in an organism therefore of a pronounced toxicity seems to be the determining factor in accounting for the absence of septicity, since in all cases the latter is present on the more or less pronounced absence of the former.

Is this quality of toxicity in the infectious pathogens a fixed one to the exclusion of other qualities? Or is it associated in them with that of septicity which may become under certain conditions, the more pronounced of the two?

The facts bearing upon these questions are as follows: The bacillus lanceolatus is frequently found in situations, as in the meninges, pleuræ and pericardium, which indicate it as the cause of the diseased condition of these structures, while the lungs are free from the classic signs of pneumonia, and the mode of invasion of these structures in such cases becomes a matter of speculation, "the avenues of entrance for the cocci are in all probability the nose and mouth, and next most frequently through the maxillary and tympanic cavities and the cribriform labyrinth by way of the vascular and lymphatic routes."[3]

There occurred recently in the hospital service of my friend Dr. Lesage of Paris, France, an epidemic infection from this organism which serves to illustrate the varying degree of toxicity which it may develop as well as its septicity. Among a number of infants ranging from two months upward, there started an acute fulminant disease, resulting, in the first case, in death within forty-eight hours. The symptoms were those of intoxication; there was little prodromic manifestation, the attack usually commencing with fretfulness and convulsions. The temperature did not range high, there was profound impression upon the nervous centers, the little ones dying comatose. Nearly all the children in the ward were attacked; nearly all died; the mortality was startling. Himself a noted bacteriologist, Lesage was alive to the possible infecting cause in these cases, the possibility of their being due to other cause than bacterial intoxication having been quickly eliminated. From each case during the continuance of the disease and from the cadavers there were made numerous plantings of the blood, and of the juices of the liver and spleen, and of the pericardial, pleural and cephalorachidian fluids. From these cultures he was enabled to conclude that the infecting organism was the bacillus lanceolatus pneumoniæ; that it was present in the bronchial mucus in all of them; that it was present in the blood and other tissues in many; that a certain number gave no colonies save from the tubules of the lungs, that is to say, the tissues were sterile, there had been no septicemia. In none of these cases had the symptoms been those of infantile pneumonia, nor did the lungs present any signs of consolidation when examined post-mortem, there being at most a catarrhal bronchitis.

In these there is demonstrated the possibility, nay the fact, of the development of the toxic quality of bacillus lanceolatus to such a degree that death took place from the absorption of the toxin from the colony localized in the lungs, where the organism was found in the bronchial muco-pus, without the classic local reaction and without the invasion of the circulation from the primary colony; *a purely siderante type.* Also the fact of the pulmonary infection, followed by septicemia, in cases presenting no signs of pneumonia, the organisms being found throughout the body; cases of secondary infection, or rather, of intoxication and septicemia. All of the infants developed the infection in the lungs; all showed marked symptoms of intoxication; in none was there a pure septicemia. In some the disease lasted for several days, the septicemic symptoms preponderating.

In epidemic meningitis the bacillus lanceolatus has been found giving rise to the disease, no other organism being present in the sero-pus of the meninges. The point of entrance, in such epidemics, is quite obscure.

From the reported experience it is quite clear that these cases depend on the local colonization

of the bacillus lanceolatus. This then develops a most marked quality of septicity, so injuring the lung tissues that, in the absence of all local reactionary symptoms, a blood invasion takes place and meningeal or other diseases result as a secondary factor, although it may announce the presence of disease.

In diphtheria there is no evidence of the possession of the septic quality by the bacillus of Loeffler. Indeed the active chemotaxic quality is intensely developed in this organism, and clinical knowledge is limited to the classic type of the disease. There is at hand, however, much information relative to the changes in the qualities of this bacillus when cultivated outside of the body. We recognize the pseudo-bacillus—one not exhibiting the quality of toxicity at all—and the existence of a diphtheria bacillus, which, lacking its toxicity, has developed a marked septicity for animals.[4] Further observation may demonstrate similar mutations to those seen in the bacillus pneumoniæ.

In enteric or typhoid fever there is an abundant literature to establish the view that the disease is frequently independent of any invasion of the alimentary canal, since the typical lesions are frequently absent from its mucosæ, and much to indicate a primary invasion of the lungs with secondary sepsis. The toxic quality of Eberth's bacillus is not pronounced, that is to say, to the extent of producing marked local reaction, and since Calmette has described rather characteristic alterations of the glandular follicles of the small intestine in those dead of peste, it would seem more than probable that the glandular changes are due to the toxin, whatever may be the site of the original colony of the germs.

In typhoid the disease quickly assumes the septic type in all cases in which the bacillus develops the septic quality. It is not possible to determine how many cases of incipient typhoid intoxication occur which present only the primary phenomena common to most of these intoxications and result in the arrest of the disease in this stage, or short of the development of a septicemia, whence result all the symptoms of typhoid after the first week, but there must be a great many of them. Nor is it improbable that many acute conditions, ending fatally and presenting no classic pathologic changes, are *typhoid intoxications* similar to those *siderante* types of yellow fever and peste to be mentioned further on. The mutations of the organism of Eberth are known in the number of pseudo-bacilli which have been isolated, but I am not aware of any clinical recognition of the *foudroyant* type of the disease. A recent study of this question has resulted in the conclusion that the bacillus typhosus produces but little toxin (in artificial media) and that typhoid fever must be considered a "modified septicemia."[5]

There is no intention on my part to antagonize the long prevalent views as to the mode of invasion of the germ in typhoid fever, but there can be no doubt that they must be modified, if not entirely abandoned, and that sanitary measures must be directed as much to the prevention of the inhalation of germ-laden dust as to the drinking of polluted water.

In peste, the conclusions of the mixed commission which studied the disease at Oporto, Portugal, during the prevalence of the disease in that city, in 1899, demonstrate that the disease is almost purely a septicemia. M. Calmette, the French member of the commission, in a most learned memoir, states that there are at least two varieties of the disease, the "classic bubonic plague" and the "pneumonic pesteuse." Recognizing the importance of abrasions or cuts in the cuticle as a ready route of entrance for the germ and giving instances of such artificial infections, all of which resulted in septicemiæ, he mentions cases which seemed to originate as *lung infections,* or as pulmonary peste.

These were rare, the larger number seeming to be "bubonic," that is to say, they were septic from the commencement of the disease, the buboes being developed at the time of the first examination. In all of his cases cultures were made from the blood upon their entrance into hospital, and in all cases the bacillus pestis was recovered, provided the planting had been done before the administration of the Roux "sérum anti-pesteuse." He decides therefore that peste is almost a typical septicemia.

There were however a number of cases mentioned presenting primarily the classic symptoms of "bubonic plague," which, to his chagrin, suddenly became complicated by severe pulmonary symptoms and died, although at first they were considered quite benign. Calmette exhibits marked power of observation up to this point in his work, but here he allows the presence of the bacillus pestis in large numbers in the lymphatics leading from the lungs to influence him to the conclusion that these pneumonies are due to an invasion of the lung structure *from the blood,* in which the bacillus is (somehow) primarily located, through the lymphatics which enter, or pass out through their roots, forsooth because the edematous, sodden lung teems with the bacillus pestis.

Nothing can be more far-fetched than this explanation; first, because it offers no opinion as to the mode of original invasion in the typical bubonic cases in which wounds of the cuticle are not present; and, second, it gives too much importance to a pathologic condition in the lungs which is not peculiar to this disease alone and is due solely to the continued influence of the toxins upon the structure of the lungs, directly or indirectly. This results in almost total loss of elasticity of the resilient tissue supporting the terminal vessels. These in turn, losing this support, become congested; there is interstitial edema and a condition of semi-consolidation, only typical of such injury to the elastic tissue of the lungs. This condition is quite common to influenza, in which disease it is frequently erroneously diag-

nosed as pneumonia or broncho-pneumonia.

The organisms forming the primary colony in the lung in cases of peste would increase enormously under such conditions of the lung favorable to their development and the lymph-channels as well as the blood would teem with them. Calmette states that these cases resist the "sérum anti-pesteuse" and are fatal. Similar observations were made by a committee appointed by the Department of Health of Berlin, Germany, for the consideration of plague measures, and mention is made in its report of cases in which death occurs before any appearance whatever of localization, before the patient is even made aware, by pain, of his condition.[6] Dr. Schmidt also encountered notable pulmonary engorgement, with bloody, frothy sputum, and râles, but no evidence of pneumonia in eighteen of twenty-four cases and in all of these the peste bacillus was found in the sputum.[7]

From these facts there are, then, cases of peste which, commencing as a recognized lung colonization, more or less quickly develop sepsis and exhibit the usual signs of bubonic plague; others which exhibit no lung symptoms at first, and are simply bubonic in type, until the later appearance of very grave lung symptoms, which terminate fatally. Whether there may be *siderante* types of peste, Calmette does not determine, but reports[8] from the foci of plague of rapidly fatal cases should attract attention to this probability, and under epidemic influences every case of sudden death should be investigated bacteriologically. The probability of numerous cases of peste of so light a type as to escape medical observation during the prevalence of the disease is clear.

I therefore submit that the theory of Calmette as to the mode of infection in peste is in error, save in the rare cases which he describes as pulmonary, and I advance the facts, as given in this disease and the other infections mentioned, to establish that peste is essentially a respiratory disease; that the bacillus, being preeminently septic, gives rise to but slight local reaction in the lungs and passes readily into the circulation, causing septicemia, the "bubonic" symptoms being *always secondary*.

The bacillus pestis is known to be changeable, and I have seen two isolations of this organism from cases of peste in which the quality of septicity was found wanting when the bacillus was injected into animals, the organisms producing no appearance of disease. If, however, this changed bacillus is placed upon the mucosa of the nares, infection takes place and sepsis results. These observations are not unique in that in no other infectious pathogen has the quality most pronounced, after infection has taken place, been found wanting when the germ has been recovered, but that they demonstrate that reinfection through natural channels serves to prove its specificity and restore its septicity.

With reference to the exhibition of the qualities of toxicity and septicity by the bacillus icteroides in yellow fever the conditions are very patent. From a close observation of the disease in man, both in the tropics and in the Southern States, and of the disease as produced in animals by natural methods of infection, I am convinced, as shown in the conclusions arrived at by the Commission of which I was the senior member,[9] that the bacillus icteroides possesses both these qualities in a marked degree. My observations have demonstrated that yellow fever of the foudroyant type, in which the patient becomes at once desperately ill and dies within forty-eight hours, is due to the intensity of the intoxication from the colonization of the bacillus *in the lungs*, and that in them there is no exhibition of the secondary sepsis, that is to say, of the presence of the bacillus in the blood or organs. Also in the large number of well-developed cases of yellow fever, with possibly lessened toxic power, the bacillus exhibits marked septic power, giving rise to the septic symptoms known as the "third stage" of the disease, the "first stage" being due to the primary colony in the lung tissue, whence the bacillus invades the circulation. The great probability of there being numerous cases of this disease so ephemeral as to escape diagnosis during epidemics, or in endemic areas, is made evident by our clinical experience under such conditions. The disease has been known to exist for months without correct diagnosis because of its mild character.

During my studies in yellow fever I have not observed the pseudo-bacillus icteroides, and I realize that this must be very difficult in view of the close relationship between many of these organisms in their biological and cultural characteristics.

In the infections with the tubercle bacillus of Koch there have been almost inexplicable abnormalities, such as the primary colonization in the joints, in the testes, in the meninges, the pleuræ, or the peritoneum. This has been so marked that many of them have been explained only on the hypothesis that the organism must have entered the body of the embryo through the placental circulation, and there remained dormant, producing disease only when some accident to the tissue in which they may lie is sustained. This cannot explain all cases. In the classic type of tuberculosis of the lung the toxicity of the germ is developed to the extent of the production of an aggregation of cells, the grey tubercles, which limit more or less perfectly the diffusion of the organisms, and thus prevent sepsis or the invasion of the blood and other organs from the primary colony. These limited infections may recover, or they may progress very slowly, unless influenced by some complication. In other cases the reaction at the seat of infection is slight, the bacillus invades the circulation and sepsis results in the deposit of the bacillus at some point or points at which a new colony may be formed with all the expressions of local tuberculosis, the colony in the lung progressing or not to local destruction of tissue.

It does not, however, seem probable that there may be developed the "foudroyante" type of tuberculosis, the tendency being rather to the development of the septic quality of the disease.

Of course, these infections are considered to be pure, and there is no intention to introduce the idea of mixed infection by the use of the terms "primary" and "secondary," as they apply only to the germ producing the specific infection.

From what has been said it is evident that the toxic and the septic qualities coexist in many of the infectious pathogens; that in a few of them the former alone is exhibited, with or without the phenomena of chemotaxis, while in others they are both pronounced; and, finally, that in at least one case, bacillus pestis, the latter quality may be developed almost to the exclusion of the former. Therefore their coexistence would seem to determine that the two qualities are not antagonistic, and yet it is only in the presence of extreme toxicity that we do not have sepsis, and that the less pronounced the intoxication the more readily is sepsis developed. The examples of bacillus pestis which have lost their septic quality, as already alluded to, and that of bacillus diphtheriæ, which, having lost its toxicity, has developed a heretofore unrecognized septicity, demonstrate that, like toxicity, the quality of producing sepsis is inherent in the pathogens, of less potential it may be than the former, and apt to be overshadowed by it.

This quality, evidenced by the presence of the organism in the blood whence it may pass into any tissue, must depend upon some specific injury to the tissues at the seat of the primary colony, which is of such a nature that the invasion of the blood can take place. That this is not dependent on the presence or absence of local reactionary symptoms is shown by the two most prominent of the truly toxic diseases, diphtheria in which there is local reaction and tetanus in which there is not, and in neither of which is there sepsis. Septicity is a factor in the equation of the acute infections which must be recognized, since this recognition will result in an explanation of those obscure points in the natural history of these diseases which have proved veritable stumbling-blocks both to the clinical and didactic teachers.

In such diseases as typhoid fever and gonorrhea, in which the infection may take place from the mucosa of some organ other than the respiratory tract, the septic quality will be as readily followed by sepsis as from infections along this tract. The law, then, in these acute infections, which governs the formation of the types of cases encountered in all of them, is that the infection having taken place, *the type of the disease must depend upon the development in the infecting organisms of the inherent qualities of toxicity and septicity; that if toxicity preponderate there will result the toxemiae, and if septicity be the more pronounced the septicemiae will be produced, since these qualities coexist in each infective germ, the one or the other being exhibited in greater perfection according to environment.*

I fully appreciate the desirability of having at hand more information drawn from experimental work in this matter, but it may not be necessary always in order to present a truth formulated on experimental and clinical study of one infection (in my own that of yellow fever) which can be applied to other infections, to present actual experimental work in those allied infections in evidence. Also that conditions, not theories, having been established in one infection, the laws relating thereto may be applied to all infections in so far as their application can explain the peculiar characteristics of such infections.

The influence of these facts has been materially felt in the production of the curative sera, those infections characterized by mixed toxic and septic symptoms, such as enteric fever, pneumonia and yellow fever, having thus far yielded but slightly to such treatment, while the most toxic, as diphtheria and tetanus, and the most septic, as plague, have been benefited by their appropriate sera. Therefore it appears likely that until it is possible to dissociate these qualities in any specific organism and to utilize the one desired, it will be impossible to produce a curative serum with anything like the beneficence of the diphtheria antitoxin.

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TOTAL EXTIRPATION OF THE URETER.

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Total extirpation of the ureter means the removal of the entire canal from a point just below the pelvis of the kidney to its very entrance into the vesical wall. The operation is done either simultaneously with nephrectomy (primary) or some time, sooner or later, after this interference (secondary). The primary operation is rarely carried out. It means for the patient a serious addition to the risk connected with removal of the kidney; it requires more time and, consequently, a longer general anesthesia, both important factors in this particular operation; in cases of suppurating or of tuberculous kidney it will often render impossible the task of maintaining an aseptic condition of the large retroperitoneal wound. Tamponade followed by secondary suture will then become necessary. This complicates the after-treatment and prolongs convalescence. We

shall, therefore, oftener hear of secondary than of primary total ureterectomy.

Inasmuch as the operation is always simultaneous with or consecutive to nephrectomy, the same pathologic condition that had induced the surgeon to extirpate the kidney will be found to exist in the ureter.

Those who have followed the evolution of renal surgery know that conservatism has taken a firm hold in this chapter of our science. To-day the kidney is at the first operation removed only in cases of tumor, primary tuberculosis, and exceptionally severe cases of suppuration; and even in these affections a few authors have recently argued against sacrificing the entire organ. Whether such an attitude is justified, the future will show.

It appears proper to review separately these three indications for primary nephrectomy recognized to-day by the majority of surgeons, with regard to their influence upon a probably following total extirpation of the ureter.

1. *Tumor of the Kidney.*—As a matter of course, only malignant growths come into consideration. Of these I exclude such as did not primarily originate in the kidney. As far as I have been able to ascertain, a case of total ureterectomy for carcinoma or sarcoma of the kidney has not been reported in literature. Of course, if the ureter should appear to be involved in the disease, no surgeon would hesitate nowadays to make his operation a radical one, even if he should be obliged, owing to the serious condition of his patient at the time of the first operation, to wait a few days before doing ureterectomy. Nevertheless, it is evident that in the majority of cases the ureter need not be removed entire. If the latter organ has become involved in the disease to its entire length, the trouble will in almost every instance be beyond the reach of the knife. Thus, ureterectomy in cases of malignant renal tumor will generally be a partial one. The operator will do well, in every instance of this kind, to remove as much of the upper portion of the ureter as he can reach from the wound, without subjecting the patient to an additional operation. If he has done that, he will have carried out what appears to be necessary in the given case.

2. *Tuberculosis of the Kidney.*—In fourteen cases of renal tuberculosis where I had to perform nephrectomy, the ureter was not totally extirpated. In all these the wound closed without leaving a sinus, although scraping and proper treatment of the wound became necessary, now and then, toward the end of convalescence.[1] If materially infiltrated, the proximal part of the ureter was resected as far down as possible; if not especially affected by the tuberculous process, the tube was simply cut off below the kidney and dropped back into the retroperitoneal space. The latter procedure I practised up to several years ago. However, since I have observed a case in which the greater part of the urine from the healthy right kidney was discharged through a fistula in the left loin where the ureter had been simply cut off after extirpation of a tuberculous kidney, I have modified my method, and now invariably cauterize the lumen of the distal end with a Paquelin, and then tie it with catgut. Prior to operation the cystoscope had shown, in the case just referred to, the mouth of the right ureter to be healthy; that of the left much ulcerated. By the ulcerative process the physiologic valve-action of the ureteral mouth had been completely destroyed. The urine, after having descended from the right kidney, simply ran up and out of the open lumen in the left lumbar region, principally when the patient was in a recumbent posture.

Primary total ureterectomy for tuberculosis is certainly rarely indicated. Howard A. Kelly of Baltimore, James Israel of Berlin, and a few others have reported such cases. Here it was seen during nephrectomy that the ureter was very seriously affected. Partial resection of the renal portion would have been equivalent to an incomplete operation.

In the majority of this class of cases, however, I think, the ureter will take care of itself, if the case had been correctly diagnosticated in the beginning of the disease, and then promptly subjected to nephrectomy. With the source of the trouble, *viz.*, the primarily diseased tuberculous kidney, removed, the continued reinfection of the ureter ceases, and the tuberculous process within the ureter heals. The cystoscope nicely corroborates this assumption. In the majority of cases of primary renal tuberculosis, the cystoscope shows the corresponding ureteral opening ulcerated. If the correct diagnosis be established early, and nephrectomy carried out promptly, these ulcerations around the vesical end of the ureter disappear. It is to be expected that the same will happen with tuberculous infiltrations or ulcerations farther up within the canal; in other words, that the process within the ureter heals.

In a very interesting case of this class I saw the formerly much-diseased ureteral mouth fully restored four months after nephrectomy. The patient, a woman of forty-six years, had been sick with urinary symptoms not quite a year. She is absolutely cured and well up to date.[1]

It seems to me that the cystoscope might often furnish the best means for determining the indication for secondary ureterectomy in tuberculous cases. If these ulcerations of the ureteral mouth and in its immediate neighborhood persist after *an early nephrectomy* on that side, we may conclude that the tuberculous process within the ureter has no tendency to heal.

[1] In one case, I learned lately, the lumbar wound broke open again about eight months after nephrectomy and necessitated the removal of the upper portion of the ureter.

[1] Medical News, May 1, 1897.

On pressing upon the hypochondriac region during cystoscopy, we shall then probably also observe the entrance of pus from the ureter into the bladder. I think that we can rely on these cystoscopic facts.

Another indication for secondary ureterectomy in tuberculous cases may arise if the original wound, which had thoroughly healed at first, breaks open again and a sinus establishes itself.

A few months ago a lady was sent to me by one of the leading surgeons of this city with the request that I establish the presence or absence of a tuberculous process in a ureter which had been left behind after nephrectomy. The operation had been done by a surgeon outside of New York, for—it was stated—tuberculosis of the left kidney associated with stone. Lately the lumbar wound, which had at first closed firmly, had reopened and the lumbar fistula annoyed the patient. Her physician at home had diagnosed: Continuation of the tuberculous disease within the ureter of the formerly affected side. He advised immediate removal of the whole canal, an operation which was much dreaded by the patient, and for which she was for special reasons ill prepared at that particular time. Her doctor had insisted on the advisability of immediate interference, however, and sent her to New York for that purpose. The questions which I was asked to solve were: Is the left ureter diseased? If so, is it tuberculous? Does the pus in the urine come from that ureter or from the right kidney? The cystoscope showed a rather healthy bladder and the left ureteral mouth not ulcerated; but a flake of pus rested in its lumen and projected into the fluid within the bladder, swaying to and fro. On pressing over the course of the left ureter from without, a few more drops of thick pus were seen to slowly enter the bladder and drop into the fundus. In view of the suppuration within the ureter, but the total absence of ulcerations around the ureteral mouth and in the bladder, in view also of the extreme rarity of the combination of the two pathologic processes in the kidney—tuberculosis and stone,[1] I expressed the opinion that the removed kidney had probably not been tuberculous, but a pyonephrotic stone kidney, and that now, perhaps, an impacted stone or a stricture of the ureter was the cause of the intra-ureteral suppuration. I thereupon advised, if the lumbar fistula should persist in annoying the patient by its discharge, to cut down on the ureter at a time convenient to the patient and remove the stone; or, if the ureter should be found more seriously diseased, or if a stricture should be the cause of the trouble, to extirpate the entire canal. On microscopic examination of the pus discharged from the lumbar sinus, done later, tubercle bacilli could not be detected, nor could their presence be demonstrated by urinary analysis. The further development of the case up to date seems to prove the correctness of my conclusions.

In none of my cases of renal tuberculosis, where the patients died months or years after nephrectomy, could the cause of death be attributed to the fact that a probably diseased ureter had been left behind. Nevertheless, the statement that the ureter of a tuberculous kidney, provided the trouble had been diagnosticated and attacked *early*, can generally be safely left behind, is not conclusive by any means. Only carefully conducted autopsies on patients who died after nephrectomy for tuberculosis, without ureterectomy having been added, will clear up this question. To-day we can say this much, however, that total extirpation of the ureter in combination with removal of a tuberculous kidney is indicated only if the tube is visibly enlarged and suppurating.

3. *Pyonephrosis and Pyonephrotic Stone Kidney.*—It was the operation performed on a case belonging to this class that induced me to write this article. I will discuss this indication for total extirpation of the ureter in the course of my statement of the history of the case.

G. H., twenty-three years of age; born in the United States, has always been perfectly well in regard to his urinary system until five years ago when, suddenly, without any apparent reason, he was seized with lumbar pain, more pronounced on the left than on the right side. A few days later a rather severe hematuria set in. Blood was found to be intimately mixed with the urine. He passed blood for six to seven weeks. After that a good deal of mucopurulent deposit was found in the urine. The hematuria never returned, but the turbidity of the urine continued. About two years ago micturition became more frequent; the patient urinated every two hours during the day, not at all during the night. The act of micturition was not accompanied with pain. There was no tenesmus. He had never passed a stone.

When first seen by me in June, 1897, he urinated four to five times during the day, with some pain at the neck of the bladder during the act of micturition; nights, but once. Of late he had noticed more sediment in his water, and occasionally pains in the left lumbar region, which traveled down toward the bladder. Before that the urine had been quite clear at times, and he had had less trouble and pain. The patient's father had died from phthisis, also his mother, and an uncle and an aunt upon his father's side. The patient himself had often had pneumonic attacks during childhood. He never had gonorrhea. During the last two years he had been at times seized with what appeared to be epileptiform attacks. The patient is a well built, rather muscular young man. On palpation both kidneys appear free from pain on pressure; prostate is sensitive, its right lateral lobe somewhat larger than the left. On massaging the same per rectum, some viscid fluid is discharged

[1] I have observed but one case in which I found an exceedingly small concretion within a tuberculous renal abscess.

through the meatus. The patient maintains that a similar discharge has been frequently observed lately after defecation. Urinary analysis shows: Urine, acid, contains ¾ per mille albumin, few blood cells, little mucus and pus, few hyaline and epithelial-studded casts, no tubercle bacilli, cells of superficial and middle layer of bladder, also groups from renal pelvis. Diagnosis based on this analysis: Hyperemia of the parenchyma of the kidneys with irritation and slight catarrh of the pelvis; possibly a more serious affection of one kidney with compensatory working of the other.

July 3d. Cystoscopy: Multiple hyperemic, slightly elevated spots, disseminated over the whole vesical mucosa. On the left lateral wall, not far from the ureteral mouth, a scarlet-red, diffusely outlined spot with some adherent mucus is detected. The right ureteral mouth shows distinct contours. In its immediate neighborhood the mucous membrane appears normal, of almost bluish-white color. Many injected vessels run from the ureteral opening into the neighboring mucosa. The right ureteral fold, as well as the interureteral bar, is very prominent and not diseased. The left ureteral mouth appears swollen and succulent, less sharply defined than the right, ragged, especially toward the median line, not greatly injected. The surrounding mucous membrane is in the same swollen condition, not ulcerated. The left ureteral fold is not as strictly defined as on the opposite side.

In view of the history of the patient, the trouble was open to the suspicion of tuberculosis. But tubercle bacilli had not been found on urinary analysis; cystoscopy revealed the left ureteral mouth to be swollen, not ulcerated. The other alternative was stone in the left kidney. On account of my pending summer vacation, the patient was for the time being put on a milk diet, increasing doses of guaiacol, and sent to the country. When seen again in the fall his condition was unchanged. The urine appeared as turbid as before. There were often pains in the region of the left, on and off also in that of the right kidney. Frequency of micturition: six to eight times during the day, once or twice during the night. Cystoscopy was repeated with the intention of catheterizing the ureters. Intravesical appearance is little changed. The right ureteral mouth and its immediate neighborhood is in the same condition as it was found four months ago; the left ureteral fold is more prominent; it projects like a small tumor into the bladder. Its mouth appears immovable during several minutes of inspection. No whirls of emerging urine are observed as on the other side. A mucous thread projects from the lumen of the same into the bladder; it sways slightly within the fluid that had been injected into the viscus previous to examination, but it is not pushed off, as is generally seen effected by the jets of intermittently descending urine. Catheterization of the ureters with Casper's instrument: It is easily accomplished on the right side where the tiny catheter is pushed up into the ureter for about one inch to an inch and a half, and 10 cc. of clear urine are collected in twenty minutes. The patient had not ingested any special amount of liquid before the examination. The left ureteral mouth is also easily entered, but the catheter cannot be introduced for any distance; about one-half inch up a distinct obstruction is encountered. On pushing the catheter from without it is seen to be bending at the ureteral opening. Separate drainage of the left kidney is impossible. As the patient had passed 250 cc. of a rather turbid urine just before the examination, this amount together with that drained from the right kidney was sent to Dr. Sondern's laboratory for examination. Report on bladder urine: Acid, specific gravity 1016, moderately marked deposit; amount of urea, 0.019 gm. in 1 cc.; trace of albumin; chlorides approximately 0.005 gm. in 1 cc.; moderate excess of phosphates; no blood; small amount of pus and mucus; some hyaline casts; no tubercle bacilli; numerous cells of the superficial and middle layers of the bladder; considerable amorphous urate deposit. Report on specimen per ureter catheter from the right kidney: Acid, specific gravity 1023; amount of urea, 0.025 gm. in 1 cc.; trace of albumin; chlorides approximately, 0.001 gm. in 1 cc.; no excess of phosphates; small amount of blood (from use of catheter); no pus, mucus, casts, or bacteria; numerous cells of ureter; considerable amount of amorphous urate deposit. Conclusions: Right kidney normal; left kidney, at least a hyperemia of the parenchyma and probably a more marked lesion, with compensating excretory action of the other kidney; with at least a catarrh of the renal pelvis and probably a moderate pyelitis; chronic cystitis.

On basis of these facts the patient was advised to enter the hospital for nephrotomy, probably nephrectomy on the left side. I expressed the view that the pyelonephritis was probably due to stone; that there also was a stricture of the left ureter near its vesical end, the result of former ulceration, or due to an impacted stone. The possibility was mentioned further that in spite of the repeated absence of tubercle bacilli in the urinary specimens the cause of the trouble might be tuberculous.

November 20th. Nephrotomy at the German Hospital. Simon's incision. Kidney large, hyperemic, with fluctuating pelvis, and dilated upper portion of the ureter. No tubercles are found on the kidney surface. The organ is easily brought in front of the lumbar incision. No stone is palpable. Aspiration of the pelvis demonstrates the presence of a slightly turbid fluid. On incising the pelvis about three ounces of the described fluid ran out. The finger introduced fails to detect a concretion. The calices are enlarged. To make things absolutely sure, the renal vessels are compressed by an assistant's fingers and the kidney is incised at its convexity and split in two halves, down into its

pelvis (section cut). There is no stone in the parenchyma either. The renal tissue appears not materially altered. The two halves are stitched together with four to five catgut sutures; the digital compression of the pedicle is then interrupted. The consequent slight oozing at the site of the incision is easily controlled by pressing some aseptic gauze on the wound for a short while.

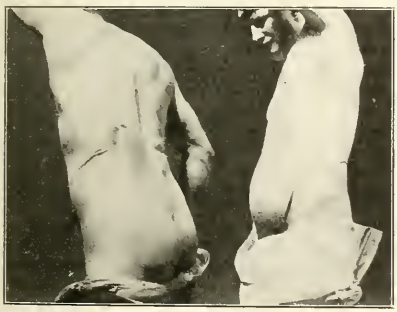
The cause of the hydro-pyonephrosis, then, was not found in the kidney itself. It had to be looked for farther down. The kidney was pushed back into its normal bed, the edges of the pyelotomy-wound were held apart with sharp retractors and the ureter explored. A flexible rubber bougie met an insurmountable resistance about six to eight inches below the pelvis. On introducing a small soft-rubber catheter, cut off transversely at its end, and throwing in sterile water with a hand-syringe, it was seen that about one to two ounces would flow down without reappearing. But on increasing the quantity of the injected fluid, suddenly the whole amount was regurgitated. The procedure was repeated to make sure of the observed phenomenon. The catheter was withdrawn from the ureter, and a long metal probe was introduced instead. It met the same firm, but soft obstruction. There was no feeling of grating. Conclusions: Stricture of the ureter with accompanying hydro-pyonephrosis. The causative factor was so far unknown. Perhaps, in view of the result of the ureteral catheterism, a stone which had traveled down, and was now impacted in the ureter near the ureteral mouth, had formerly set up an ulceration with consecutive formation of a stricture at that spot. In consideration of the comparatively good appearance of the renal parenchyma, at least macroscopically, I could not at the moment make up my mind to remove the kidney. Accordingly the pelvis was drained, the remaining wound tamponed with aseptic gauze, and the patient brought to bed. On the following day I explained the condition to the young man. I stated that I could try to resect the ureteral stricture and perform a uretero-ureterostomy, and thus succeed probably in saving the kidney; but that I could not promise a cure. On the other hand, the treatment might be considerably shortened by removing the kidney, an operation which could still be easily accomplished, and was justifiable, as we knew from the previous separate drainage that its fellow was present and healthy.

The patient decided to have the left kidney extirpated. On November 24th the gauze was removed from the wound, a strong clamp applied to the renal vessels with ureter and the kidney cut off. The wound was sutured at its ends, otherwise left open and drained with strips of sterile gauze. The clamp was removed after forty-eight hours. Recovery was uninterrupted. Early in January, 1898, the patient was discharged with his wound healed and much improved in every respect. I then lost sight of him.

Fifteen months later, in March, 1899, my friend, Dr. Herm. Goldenberg, called on me to inquire what kind of an operation I had performed on G. H. The young man had come to his department in the dispensary of the Mt. Sinai Hospital, complaining of pain in both lumbar regions, frequent turbidity of urine, and general malaise. Separate collection of the urine with Harris' segregator on two occasions had shown the descent of clear urine from the right side and about one to two ounces of turbid, purulent urine from the left. This result was inexplicable, inasmuch as the patient maintained that his left kidney had been removed. In answer to the inquiry, I explained that the left kidney had been removed, but that its strictured ureter had been left behind. I called attention to the possible inaccuracy of the result obtained with Harris' treatment. The latter was at that time on trial in New York in the hands of many colleagues. The doctor promised to repeat the examination for a third time. If the same misleading observation should be made, we agreed that the bladder should first be thoroughly flushed until the water returned clear; a specimen of this clear fluid should be put aside. Then the same amount of clear water should be thrown into the bladder, the catheter, plugged, left in place, and massage performed for a short while along the diseased left ureter. If the water in the bladder should become turbid, it would be proven that the site of the suppuration was within the left ureter. A third trial with Harris' instrument again allowed about 10 cc. of a turbid urine to run from the left of the intravesical watershed. The other experiment gave a positive result. Having later satisfied myself as to the correctness of the massage-test over the left ureter, the indication for ureterectomy was clearly established. On March 18th it was done at the German Hospital, with the incision as devised by James Israel of Berlin. The cut was made through the abdominal wall from the tip of the eleventh rib toward a place corresponding to the middle of Poupart's ligament. The ureter was found to be about the size of the thumb, soft, fluctuating, and covered with a dense network of small blood-vessels. After careful dissection an additional incision was made at the upper end of the wound, parallel to the twelfth rib, into the scar that had resulted from the former nephrectomy, and the wound at its lower end continued to the border of the left rectus muscle. By turning the patient on his right side and placing him in a Trendelenburg posture of various degrees, I well succeeded in exposing the entire canal down to the bladder without ever entering its cavity. It was clearly visible from without that there was a tight stricture at the junction of about the middle and lower thirds of the ureter. When about to tie off the lower portion at its entrance into the vesical wall, a stone of about the size of a large pea was found firmly wedged in the ureter, just above the ureteral mouth. After some efforts

it was successfully dislodged and pressed into the ureter toward the lower aspect of the stricture. Then the upper and lower ends of the ureter were tied off with strong catgut, and the whole organ removed by cutting it off between these ligatures and a clamp, which had been applied about half an inch away from each ligature. In order to catch a possibly outflowing drop of the infected contents of the ureter, aseptic gauze had been pushed below the organ, near the bladder. I thus succeeded in keeping the large retroperitoneal wound absolutely aseptic. The lumen of each stump was then cauterized with the Paquelin, a strip of sterilized gauze run down to them, and the entire abdominal wound carefully closed layer by layer with continuous catgut sutures. The patient made a perfect and uninterrupted recovery. To-day, ten months after the operation, his abdominal wall is firm everywhere; there is no tendency to hernia. Fig. 1

FIG. 1.



Extirpation of Ureter.

shows the extent and present appearance of the scar. The specimen, when cut open, presented a very narrow stricture at the junction of the middle and lower thirds of the canal, as stated. The part above as well as below it was much dilated (see Fig. 2). The stone had a number of sharp projections all over its circumference. They had, no doubt, caused its firm lodgement within the vesicle end of the ureter, just within its narrowest spot, the mouth.

With these pathologic specimens at hand, the history of the case is easily explained: Five years ago this stone entered the ureter, producing pain and the hematuria. At its entrance into the small pelvis it was arrested, causing the ulceration, followed by stricture. Later the stone itself traveled farther down, but was again held up right in front of the ureteral mouth on account of its irregular surface. This second stricture in the course of the ureter, represented by the stone, caused the dilatation of its lower third. That it was this one stone only that gave rise to the many years of sickness is proven by the fact that the patient at no time had symptoms pointing to the presence of a vesical stone, nor did he ever pass any. To-day the patient voids perfectly clear urine at normal intervals. His left side never gives him trouble; at times he experiences pain in the right kidney. Perhaps nephrolithiasis, so often found bilateral, is now developing on his right side(?). He is long back at work, but often annoyed by his epileptic seizures.

This case nicely illustrates what an amount of mischief can be produced by a single renal calculus which cannot pass the ureter. It also shows the necessity of carefully testing the patency of the lower portion of the ureter when performing uretero-ureterostomy for stricture. Had my patient consented to this conservative operation, we probably might have saved his kidney; yet, had I then omitted to satisfy myself as to the rather improbable presence of a

FIG. 2.

a. Extirpated ureter showing tight stricture at junction of middle and lower third, with marked dilatation above and below. *b*. Calculus.

second obstruction farther down, even the successful restoration of the ureteral lumen would have been a failure functionally. On the other hand, it would probably not have been difficult, at the time of such an operation, to mobilize a stone lodged within the vesical end of the ureter, and to push it up in order to be extracted through the ureteral incision before the canal was again closed.

The case further demonstrates the necessity of always testing the patency of the ureter when performing nephrotomy and nephrectomy. By doing so a stricture will be definitely diagnosticated and located. If a grating is felt at the point of resistance, the presence of a stone lodged within the ureter is demonstrated. If the stone can be reached from the lumbar wound, the surgeon ought to try and push it up and extract it. If, however, the calculus is in the lower end of the ureter, the organ ought to be exposed extraperitoneally at once, provided the patient's condition permits of such a procedure. If it does not,

it must probably be done later to avoid further trouble. In a case of nephrectomy for pyonephrotic stone kidney I lately succeeded in nicely pushing up and extracting two irregular stones from the upper part of the ureter. Free irrigation downward into the bladder proved afterward that the canal was unobstructed farther down. If a ureter is filled with a great number of calculi, it is best to excise the entire canal.

I do not believe that a stricture in the ureter without the presence of the stone, whose passage originally caused the stricture, will often necessitate the extirpation of the ureter after the kidney has been removed. It is rarely so tight as to prevent the small amount of mucus discharged above from passing into the bladder. If diagnosticated during nephrectomy we ought not to tie and canterize the ureteral stump, but rather leave the ureter open and stitch it into the lumbar wound. With proper drainage of the upper part of the ureter into the lumbar wound and, if necessary, with irrigation and dilatation of the ureteral stricture from this wound, the ureter has a better chance to heal.

Since writing this article I have done a second total extirpation of the ureter on a man, thirty-seven years of age, who had his left kidney extirpated by another surgeon for what seems to have been a pyonephrosis, almost four and a half years ago. After this his general health improved, but not the local trouble. Four months later his bladder was drained through the perineum for a number of weeks by the same surgeon; no improvement. One year later suprapubic cystotomy was done, this time in another hospital, without, however, improving his condition. A fistula remained at the site of the incision. Lately he has come under my care. On examination I felt a hard cord in the course of the left ureter, very painful on pressure. A valve-like obstruction at the neck of the bladder prevented the entrance of an instrument, even of small size. Vesical irrigation and cystoscopy were, therefore, impossible. With the view of making as distinct a diagnosis as was possible under the circumstances, I made him pass some urine. The same was turbid but odorless. Then I massaged the left groin downward. The urine then voided was entirely different in color, contained much more pus, and was very offensive. The diagnosis of chronic suppurative ureteritis was established beyond a doubt. On January 4, 1900, I extirpated the diseased ureter. The operation proved to be extremely difficult on account of the old and very firm adhesions around the very much enlarged and soft-walled canal, which had been cut off pretty far below the renal pelvis at the time of the first nephrectomy. I succeeded, however, in removing the entire ureter down to its entrance into the bladder. At this latter spot it was strictured, but did not contain a stone. The patient has made a good recovery and will soon leave the hospital.

By making it a rule always to test the patency of the ureter down into the bladder when doing a nephrotomy or a nephrectomy, and then, according to the result of this examination, adding, immediately or later, the necessary treatment of or operation on the ureter, many a kidney will be saved from extirpation and much trouble be spared to our patients.

MEDICAL PROGRESS.

The Cecum and Its Appendix.—G. Perondini (*Revue de Chirurgie,* August, 1900) gives the result of extended observation on the anatomical relations existing between the cecum and the appendix; he finds that in eighty-three per cent. of the cases the cecum is situated in the lower part of the right iliac fossa; next in frequency he finds it located in the middle of the iliac fossa or in the pelvic fossa or in the umbilical region or in the lumbar fossa. The direction of the axis is usually obliquely to the right, upward and backward; in two cases it was transverse, while in three it was vertical; the serous covering was complete in seventy-five per cent. of the cases examined; its length is usually 6 centimeters and its width 3 centimeters. The appendix was in most cases cylindrical, vertical, and within the cecum; in ten cases it was retrocecal; the average length of the appendix was found to be 7.6 centimeters, while the breadth averaged 5 millimeters.

Radical Treatment of Tubercular Testis.—A. Moschowitz (*Med. Rec.,* September 15, 1900) states that it has not yet been definitely decided whether or not there can be a primary tuberculosis of the genital tract without the coexistence of a tuberculous focus in some other part of the body; yet we not infrequently see patients with a tubercular nodule in the epididymis, who give no other tubercular symptom. The danger of such a nodule lies in its power to infect the entire genito-urinary tract, the tubercle bacilli being carried by the seminal secretion into the corresponding vas deferens, infecting first its scrotal, then its inguinal and abdominal portions, until the entire vas deferens up to the seminal vesicles is involved; then the seminal vesicles are infected and, finally, the corresponding lobe of the prostate is involved. Bearing these facts in mind, it is evident that simple castration is not radical enough to check the ravages of the disease; hence the following treatment is advised. Castration should be performed by the usual method and through the usual scroto-inguinal incision with the exception that the vas deferens is primarily not divided at the level of the vessels, but is carefully isolated from the other structures of the spermatic cord, and left in connection with the testicle; then as much of the vas deferens is pulled out of the inguinal canal as can be done without running the danger of tearing it off. After placing a ligature around it, it is divided and the proximal end is carefully seared with a Paquelin cautery, so that in the subsequent ma-

nipulation no opportunity shall be given for any exuded material to infect the channel of the vas deferens between the peritoneum and the bladder; after removal of the testicle the external incision is closed with or without drainage. The patient is then placed in the lithotomy position; a sound is introduced into the bladder to serve as a guide, and a curved incision is made in front of the anus, extending from one tuberosity of the ischium to the other—the so-called prerectal incision of Zuckerkandl, or, more preferably, Kocher's "pointed arch" incision; after division of the superficial and deep perineal fascia, and of the tendinous union between the bulbocavernosus muscle and the external sphincter of the anus, the urethra being held to the front by a blunt retractor, the space between the rectum and urethra is deepened by blunt dissection, until the levator ani, or more particularly its anterior portion—the levator prostatæ—is reached. This is then divided by a pair of scissors; the divided muscle retracts, and the prostate and diseased seminal vesicles are reached by the palpating finger; the finger of the left hand is introduced into the rectum and hooked over the upper border of the prostrate; traction is exerted and it is surprising how much of the prostate and seminal vesicles can thus be brought into view; should this, however, be impossible on account of adhesions, the seminal vesicle may be grasped by a clamp and gentle traction made to liberate it further; proceeding in this manner the entire unruptured seminal vesicle and the remaining portion of the intra-abdominal part of the vas deferens are brought into view. That the entire vas deferens is being extirpated can be recognized by the attached ligature and the seared surface. The seminal vesicle and vas deferens are by this time attached only by the ejaculatory duct which can be readily cut off; tamponade of the wound and possibly the insertion of one or two sutures into each angle of the perineal incision terminate the operation.

Osteoplastic Amputation of Long Bones.—Z. Samfirescu (*Revue de Chirurgie,* August, 1900) advocates the use of his method in cases of amputations in the continuity of the long bones of the extremities; this method consists in the formation of an osteoperiosteal flap, applied to the cut surface of the amputated bone; this gives a smooth stump covered over with periosteum and one most serviceable for the adaptation of an artificial limb. By this method the amputated bone and its diaphyseal segment unite just as soft tissues do, thus giving strength and solidity to the limb, preventing the growth of bone after amputation, and obviating the sensitive stump so often seen after the old method of amputation. While the operative technic is elaborate and consumes more time (forty to forty-five minutes) than is usually required in amputations, the author believes that subsequent permanent advantages derived from such a stump compensate for the time taken up by the operation.

Cancer of the Breast.—S. Keith (*Lancet,* August 18, 1900) says that there are but three questions of interest to both lay and professional minds, *viz.,* is it increasing; is it hereditary, and is it curable? In regard to the first two questions there is still much ground for doubt; the third question, he believes, can be answered more positively and affirmatively, yet he considers "cure" as an indefinite term unless the number of years after operative procedure is stated. Three years after operation without a recurrence of the cancer is in his experience too short a time-limit to determine permanency of cure. The removal of the breast and axillary glands is not accompanied by any serious risk; the removal of the superficial fat of the breast is as important as the removal of the pectoral muscles, as the lymphatics pass into the superficial fat. Halsted's operation he believes to be too extensive for weak patients.

Pneumonotomy with Resection of the Ribs.—M. Christovitch (*Revue de Chirurgie,* July, 1900) narrates the case of a man, accidentally wounded in the lung by a bullet, which entered at the level of the third left intercostal space. As no mark of exit could be found, it was concluded that the bullet had lodged in the lung. A simple antiseptic dressing was applied; three days later the man gave symptoms of pleural effusion, with considerable rise of temperature, until the sixth day, when his condition became so critical that an operation seemed indicated; puncture in the seventh intercostal space revealed the presence of purulent blood-tinged fluid, all of which was removed by a free intercostal incision; a small portion of the chest-wall having been resected, the bullet was felt in the lung tissue. A V-shaped flap was made over the upper part of the lung; the lung was incised and the bullet was extracted together with small foci of gangrenous lung tissue; the hemorrhage, which was slight, was controlled by gauze tampons, and free drainage was secured by the insertion of two medium-sized drainage-tubes. After an uneventful convalescence of seven weeks the patient left the hospital cured.

Kahler's Disease.—D. Allocco (*La Riforma Medica,* June 19, 1900) records the case of a man, a shoemaker, aged seventy-five years, whose previous personal and family history were negative until nine months previously, when he began to notice pain over the sternum at a spot corresponding to the pressure caused by use of a shoemaker's iron-shoe. Later a painful swelling, the size of a small orange, developed over the sternum, between the second and fifth rib, extending beyond the right and left edge of the sternum; this swelling had a pulsation synchronous with the heart's beat; over it the heart sounds were readily heard, the second sound being markedly accentuated; pulse was regular, strong, and synchronous with pulsation of the sternal tumor. Two months later pain and

swelling appeared in the left upper extremity, soon followed by a spontaneous fracture at the juncture of the upper and middle third of the humerus; a few weeks later painful nodules appeared on the ribs, having the same general appearance as that on the sternum which had become larger in volume; the skin over the sternal tumor was livid and appeared necrotic in spots; a Pravaz needle inserted into the sternal mass proved it to be solid. Soon fracture of the ribs occurred at the site of the nodules already described, followed now by spontaneous fracture involving the right humerus. The patient's general condition had meantime grown steadily worse. A tumor soon appeared at the crest of the left iliac bone; this mass grew rapidly in size; on palpation a disc of bone could be distinguished free in the mass; except for pain in the bones on passive movement, there were no other marked symptoms. The anemia and cachexia increased gradually, until at the end of the eleventh month from the beginning of the disease the patient died. Autopsy revealed the presence of uniform bone changes which consisted principally of a rarefaction of the medulla of the bones; although in life the vertebræ had given no clinical signs, they were found to be the seat of the same process as was found in the sternum; the heart was anemic and dilated; the liver diminished in size, while the spleen was somewhat enlarged; the kidneys were congested. The interest in the case lies in the question of a diagnosis in life; at first it appeared as though the sternal swelling were an aneurismal tumor involving the arch of the aorta; not until other osseous symptoms arose was the correct diagnosis possible. Whenever there is a history of such bone swelling and fracture one may expect to find *a marked and persistent albuminuria;* these symptoms, together with the progressive nature of the disease, characterize Kahler's disease.

Massage in Peri-Articular Fractures.—G. Woolsey (*Annals of Surgery*, September, 1900), acting on the theory of Championnière that immobilization of a fracture relieves only the primary pain due to the movements of the fractured ends on one another, allowing or favoring the secondary pain due to swelling of the surrounding parts that it imperfectly restores the original form of the part, especially in fractures near joints, when the swelling may produce the deformity; that it does not favor the repair of bone or the restoration of function, but, on the contrary, causes scantiness of callus, sometimes resulting in delayed union or in stiffness of the neighboring joints or atrophy of the muscles of the limb has found that *massage* in fractures, peri-articular ones especially, gives striking results, shortening the time of repair by one-third, and of functional use by one-half or more, avoiding subsequent stiff joints and atrophied muscles. Splints or retentive apparatus should be employed between the applications of massage, as it gives a greater sense of security to the patient, as well as to the surgeon, to feel that in the interval the displacement of fragments is not possible; in Pott's fracture, where there is a strong tendency to a posterior displacement or lateral mobility, one may have to forego massage and leave the foot in a plaster splint. Massage is usually begun about the third day after the receipt of the injury, although it may be employed in various cases from the first or the seventeenth day; it must be begun carefully and gradually increased. As far as functional result is concerned, it is better to put the fracture up in plaster first and massage afterward, than the reverse; in a series of forty-seven hospital cases, the date of first being allowed up out of bed, after Pott's fracture, averaged nineteen days; care should be taken not to allow the patient to walk too soon or too much without support. In fracture of the patella there is no treatment which yields better results as to union and function than massage combined with elastic compression at first and passive motion later. Massage is equally valuable in fractures into or near the elbow-joint, also in Colles' fracture; the latter may be treated without splints from the first, with only a bandage around the wrist; it is also applicable in a limited number of fractures of the shaft of the long bone, where there is no great amount of deformity. Massage is contraindicated in compound fractures; in fracture with large blebs or a projecting fragment, great mobility or a tendency of the deformity to be reproduced and in certain fractures of the long bones. The application of massage and passive motion is easy; it relieves pain and swelling; hastens callus formation and solidification, and prevents atrophy of the muscles and stiffness of the joints and tendons. Particular attention should be paid to the position of the limb, by carefully reducing any deformity and keeping it reduced during massage and between the periods of massage, when the limb is in a splint. If this is not possible from the outset, after a preliminary massage, a plaster splint should be applied and kept on for from eight to fourteen days, and then massage commenced; the result in these cases is better as far as position is concerned, equally good functionally, and nearly, if not quite, as quickly obtained as when massage is employed from the first; if, after massaging for some time, the position is found to be imperfect, or if, after three weeks, quite firm union has not taken place, use a plaster splint for eight to fourteen days, although the functional result may be delayed thereby.

"Gun-Stock" Deformity in Fracture of the Humerus.—L. A. Stimson (*Annals of Surgery*, September, 1900) notes that fracture of the lower end of the humerus in some of its forms is not infrequently followed, especially in the young, by a conspicuous deformity of the limb known as cubitus varus or "gun-stock" deformity, which consists in marked permanent adduction of the

forearm which is most apparent when the elbow is in full extension; the most marked clinical feature is the apparently abrupt movement made by the forearm toward the ulnar side as the limb approaches full extension, and the peculiarly ungraceful appearance of the limb in this position; flexion, extension, and rotation are usually normal; the elbow viewed from behind shows the olecranon prominent and slightly displaced toward the inner side; flattening of the inner side of the elbow and fulness of the outer side, on flexion at a right angle, with apparent enlargement of the external condyle below and behind. It seems fair to conclude from cases observed that the common anatomical cause of cubitus varus is not ascent of the internal or descent of the external condyle after fracture extending into the joint, but, on the contrary, it is an angular displacement of the entire lower end of the bone after a supracondyloid fracture, or of its lower portion after a fracture, which is practically a partial separation of the cartilaginous epiphysis, especially at its outer side; the latter form of fracture seems to be possible only at an early age, not over ten or twelve years. Recognition of the displacement ought to be easy by attention to the level of the external epicondyle and head of the radius as compared with that of the internal epicondyle: the lower end of the supinator ridge must not be mistaken for the external epicondyle. Correction of the displacement could probably be easily made by pressure upward and outward against the olecranon in rectangular flexion of the joint, or abduction of the fully extended forearm, and maintenance of the latter position for a week or two, would probably be the surest means of preventing recurrence; but it should be combined with confinement to the bed; full flexion of the joint—so uniformly recommended in the treatment of all forms of fracture in this locality—could not be trusted to correct the displacement, or prevent recurrence, because in all patients seen he has found free flexion of the joint to be possible. As the deformity does not prevent the attitude, the attitude cannot prevent the deformity. If the convenient attitude of flexion at a right angle is chosen, and especially if the fracture is supracondyloid, pressure upward against the olecranon by a supporting sling must be carefully avoided, because such pressure would be transmitted to the inner half of the fragment, and would tend to produce the deviation, which we seek to avoid; the sling should take the weight of the limb at the wrist. In the other, the lower and the common form of the fracture, the rectangular position might be safely taken, if incasement in plaster of Paris was used, and the upper portion of the dressing carried over the top of the shoulder so as to prevent its descent, which would permit or perhaps even produce recurrence of the displacement.

The X-Rays and Thoracic Tumors.—E. Gebauer (*Deutsche med. Wochenschr.*, August 30, 1900) reports a case in which the history and physical signs pointed toward either pulmonary tuberculosis with great infiltration of the glands, a mediastinal new growth or aneurism of the aorta. In favor of the first were phthisical signs at the right apex, a characteristic temperature and swelling of the glands, while against it was the absence of tubercle bacilli. The presence of external dulness and Oliver's sign seemed to point toward aneurism, while the dulness, cachexia and dysphagia indicated a tumor. On examination with the fluoroscope a large pulsating mass was seen above the heart and the diagnosis of aneurism seemed confirmed. The autopsy, however, revealed extensive malignant disease of the esophagus which had invaded the lungs and formed a large mass which received and transmitted the cardiac impulse. The case is interesting as showing the caution necessary in drawing conclusions from radiographic pictures.

Queirolo's Method for Determining Stomach Boundaries.—For the accurate projection of the stomach boundaries on the abdominal surface it is usually considered necessary to inflate the stomach either with CO_2 gas or by direct insufflation of air. By means of a specially devised instrument an attempt has been made to secure greater accuracy without resorting to these troublesome maneuvers, and Edel and Volhard (*Deutsche med. Wochenschr.*, August 30, 1900) have conducted a series of comparative observations in order to determine the relative merits of the two methods. The apparatus consists of an ordinary stomach-tube whose lower end bears a small balloon, while at the other extremity are two small tubes, one connecting with a Marey registering drum, while the other is free and serves for the inflation of the balloon. After introduction this latter is moderately distended with air and, on percussion of the abdomen, as soon as the gastric limits are reached, an impulse is transmitted to the index of the registering apparatus. For the proper working of the contrivance it is essential that a certain amount of air tension be present within the stomach, and then percussion over it causes a sufficient compression of the bulb to affect the telltale. It was found that the method was accurate and gave clear-cut results but that it possessed no appreciable advantages over the older means of diagnosis.

Diphtheria and Antitoxin.—John Leverett (*Phila. Med. Jour.*, September 15, 1900) gives an interesting report of nine cases of diphtheria and calls attention to some points which he has learned about antitoxin. In Cases I. and II. 1000 units of antitoxin were injected as soon as the report was received announcing the presence in the culture of the Klebs-Löffler bacilli. This was about twelve hours after the culture was obtained. The membrane in these two cases disappeared in forty-eight hours and thirty-six hours, respectively, and the patients felt well in

a few days, but cultures showed that the bacilli were present until the thirteenth day. Of the next five cases, which occurred in one family, two died. One of these was a case of laryngeal diphtheria which, in spite of the fact that the patient received 1000 units of antitoxin as soon as the report showed the presence of the Klebs-Löffler bacilli and 2000 units the following day, got worse, although the breathing was easier, and died. The writer thinks that laryngeal diphtheria is so far advanced when it is usually diagnosed that antitoxin is apt to be useless. In the second of these two fatal cases antitoxin was not given, as the disease was so far advanced when seen. The membrane peeled off, however, in due time, and the patient seemed about to get well, when her heart got weak and she died of heart failure. In the three other cases in this family antitoxin was injected as soon as the membrane was noticed, with the result in each case that the membrane promptly peeled off and the patients rapidly recovered. The bacteria persisted in the patients' throats for about sixteen days. The eighth case occurred in a little girl who was accustomed to frequent sore throat. A culture showed Klebs-Löffler bacilli, but antitoxin was not used because the case was so far advanced when the diagnosis was made, and because the family were so firmly convinced that she had only an ordinary sore throat that the writer knew that if antitoxin were given and the patient died, the antitoxin would be considered the cause of death. The membrane disappeared but the patient died of heart failure. The ninth case, that of a baby, received 1000 units of antitoxin as soon as the bacilli were reported and was well and playing about in three days. Antitoxin should always be used in the first few days of the disease before the poison has been thoroughly absorbed into the system, as was the case in two cases here reported which resulted fatally. One important point emphasized by these cases is that the bacilli persist after the patient is clinically well if the case has been treated by antitoxin. This is important as regards the spread of the disease. The writer uses an ordinary hypodermic syringe and says that the antitoxin is best injected under the skin of the abdomen or loins. With a 30-minim syringe the needle will have to be inserted four times to inject 1000 units standard. There will be less pain if injected slowly.

Mental Disturbances After Eye Operations.—Inasmuch as delirium following the extraction of cataract is of not rare occurrence and the textbooks do not give much attention to the subject, W. C. Campbell (*Phila. Med. Jour.*, September 15, 1900) reports 2 cases occurring in his own practice and 22 other cases which have come to his notice, with a view to ascertaining what the causation of the delirium might be and what are the best measures to adopt for its prevention and relief. The removal of cataract is the operation on the eye which is most frequently followed by disturbances of the mind. This disturbance generally consists of delirium which appears usually upon the evening of the third day after the operation and continues from a few days to a week, according to the treatment. This mental disarrangement rarely occurs in the young, but usually in those of advanced age, especially those who are predisposed by heredity, alcoholism, etc., to mental aberration. Toward the evening of the second or third day after the operation the patients become restless, want to get out of bed, and try to tear the dressings from the eyes. Rapid and violent delirium soon appears and often ideas of persecution are present. Although these symptoms are more marked at night, they are not entirely absent during the day. After a few days the delirium subsides without leaving any permanent mental aberration. There is seldom any complaint of pain in the eye, and any rise of temperature is accidental and not constant. These symptoms may vary, but the above is the condition in most cases. The writer discusses briefly the various theories which have been set forth by different observers as to the cause of the delirium. In the 24 cases here reported the delirium appeared eleven times after simple extraction; eight times after the combined operation; three times after iridectomy for glaucoma, and twice in traumatic cases. The ages of the patients varied from fifty to over eighty years. The traumatic cases were much younger. In 2 cases the delirium appeared during the first twenty-four hours after the operation; in 8 cases on the second day; in 6 cases on the third day; and in 2 cases on the fourth day. Both eyes were bandaged after the operation in every case, but in 9 cases the dressing was removed from the unoperated eye as soon as the delirium began, but without any relief to the mental condition. In 9 cases there was no tendency to mental aberration, but in 2 cases such a tendency was well-marked. The character of the delirium was the same in all the cases, beginning with a restlessness which rapidly developed into active delirium with hallucinations and ideas of persecution. All cases recovered their mental equilibrium. The writer believes that the facts presented by these cases dispose of most of the theories advanced by different observers as to the causation of the delirium, and thinks that the cause is largely psychic, due to the preoccupation of the patient prior to and after the operation, and the suspense and tension under which he must be. As to treatment, Campbell gives chloral and bromides freely and repeatedly, beginning at the first sign of the appearance of the delirium.

Ichthoform.—H. Goldmann (*Centralbl. f. gesammt. Therap.*, September, 1900) speaks of ichthoform as being to a high degree bactericidal, antifermentative and deodorizing and therefore considers it well adapted to replace iodoform, especially since it lacks the odor and the poisonous qualities of the latter. Internally it is of use in all conditions of the digestive tract

depending on atony or altered secretions and also in intestinal tuberculosis. On wounds it stimulates granulations in a remarkable way, in addition to exerting an antiseptic action which exceeds that of iodoform. An advantage not to be disregarded lies in the fact that neither kidneys nor nervous system are in the least irritated even after continued use.

Cause of Migraine.—J. Deye (*Klin. therap. Woch.*, September 2, 1900) has examined many cadavers with the view to finding some anatomical peculiarity to explain the symptoms of disturbed function of the ophthalmic nerve in migraine, and advances the following novel explanation which conclusively disproves the presence of a true paralysis: The ophthalmic nerve stands in intimate relation with the carotid artery in the cavernous sinus, while between the sinuses of both sides is placed the hypophysis, the lateral borders of which are in close contact with cavernous tissue. In case of cerebral congestion from intense mental activity or other cause, the cavernous tissue will tend to swell with consequent compression of the afferent vessels of the hypophysis. This in turn will lead to enlargement of the hypophysis, and, in case the space between the two cavernous sinuses should be narrow, compression of the ophthalmic nerve between carotid and dura. Anything depleting the brain of blood, such as sleep, will diminish the pressure and hence relieve the migraine. The author has found an abnormally narrow intercavernous space in a certain percentage which coincided with the number of migraine cases among the population.

Spinal Anesthesia.—A. Bier (*Münch. med. Woch.*, September 4, 1900) has used spinal injections of cocaine to replace general anesthesia for several months, but finds that untoward aftereffects occurred rather too frequently to be compatible with the general use of this method. The vomiting, headache, vertigo and weakness, which often persisted for days, he is however inclined to ascribe not to the cocaine but to the efflux of cerebrospinal liquor which occurs, and, in some cases, to idiosyncrasy. The indiscriminate use of large doses is earnestly warned against since extended experiments on animals have still to be made to determine exactly the limits of safety. To make spinal anesthesia an ideal narcosis, cocaine should not manifest more poisonous symptoms than if injected anywhere else—a state of affairs which, with the method at present employed, does not as yet obtain; it should be as efficient for operations on the upper as on the lower part of the body; and, lastly, experiments should be made with other drugs with a view to replacing cocaine.

Hour-Glass Stomach.—F. S. Watson (*Annals of Surgery*, July, 1900) gives a *résumé* of this condition which presents itself in two forms, the congenital and the acquired. The former is characterized by the symmetrical contour of the constriction and by the absence of pathological processes immediately connected with it, the latter being the most conclusive, and as it seems to the writer, the only positive evidence of its congenital nature. The acquired form is characterized by the presence of pathological processes in immediate relation with the construction; these are in a large majority of cases the cicatrices of former gastric ulcers, or the adhesions originating from these conditions and attaching the stomach to some adjacent structure; less frequently the hour-glass deformity is produced by adhesions originating from inflammatory processes outside the stomach and involving it secondarily; in a few instances, cancerous disease of a neighboring organ has brought it about, and the contraction has been caused by the cicatricial deposit following the ingestion of caustic chemicals. The constriction usually is located at the middle of the stomach, or at the junction of the middle and lower thirds. This condition is more frequent in men than in women and usually occurs between the thirtieth and sixtieth year. The symptoms in general are the same as those seen in connection with benign stenosis of the pylorus; in the congenital form, the symptoms may be slight or not appreciable until later on in life, usually in advanced age. The following facts may help us in differentiating this condition from stenosis of the pylorus. If fluid be injected into the stomach, instead of returning through the irrigating tube, it may seem suddenly to disappear, as though it had flowed through a large hole; again, when the stomach has apparently been washed quite clean, there may suddenly be returned through the tube a quantity of partially digested food, presumably food regurgitated from the second half of the stomach back into the first; or, when fluid is injected into the stomach, the left side of the epigastrium may become distended, and then a moment or two later, this swelling may subside, while at the same moment there will appear an enlargement of the right side of the epigastrium, these changes being accompanied by a gurgling sound such as is made by air and liquid being forced through a narrow channel; finally, we may note a persistence of the splashing sound on succussion after lavage. Vomiting is the most constant sign, almost always following at once or very soon after taking food. Loss of weight is almost invariable; hematemesis is not likely to occur unless gastric ulcer has previously existed; free hydrochloric acid is probably present in most cases; gastric pain is a frequent symptom, often severe, and almost always provoked by food. The treatment of this hour-glass condition of the stomach is purely surgical; gastro-anastomosis being the most serviceable, allowing large communicating openings between the two portions of the stomach to be made, thereby avoiding the formation of cicatricial areas, utilizing the digestive and motor functions of the pyloric half, and preserving the natural outlet of the stomach undisturbed.

THERAPEUTIC HINTS.

Removal of the Uvula.—Lennox Browne (*Jour. of Laryngology*) says that not only does a long, relaxed uvula predispose to pulmonary disease, but it may be the direct inciter of the chest symptoms. He instances the case of a physician, who, with irritable cough, constant pain in the left infrascapular region, and loss of flesh and strength, was pronounced a consumptive by two eminent diagnosticians. Following the removal of his uvula he quickly regained his health, and for twenty-five years carried on an active practice without any sign of diseased lungs.

Acne.—In this condition, in spite of the greasiness of the skin, F. H. Barendt (*Liverpool Medico-Chir. Jour.*, No. 38) stops the use of soap and water. Instead he orders hot oil as a wash on the principle that this easily dissolves solid fatty matter. By this means comedones are dissolved and the skin softened in preparation for the application of sulphur. Lanolin, as it approximates the composition of human fat, is a valuable base; it should, however, always be mixed with oil, vaseline, or benzoated lard. In prescribing an ointment for acne, give explicit directions and set a time during which it is to be rubbed in.

Feeding in Gastric Ulcer.—Rest in bed demands less food and less digestive work. The diet should be fluid with or without completely digestible solids in fine subdivision, and it should be neither very cold nor very hot. Milk, if well borne, is the main source of nourishment. It is unirritating, combines rapidly the secreted hydrochloric acid, does not excite much secretion, and is easily evacuated by the stomach. Not more than two quarts should be taken in a day, and one glass should constitute a feeding. It should be slowly sipped at first, and, to avoid accumulation and distention of the stomach, the intervals should be from two to four hours, that is, long enough for the stomach to empty itself. One or two tablespoonfuls of milk-sugar may be added to the first glass each morning as a nutritive and laxative. After the pain and vomiting subside, a small quantity of a well-cooked wheat preparation may be added twice a day, and later meat broth with a beaten egg stirred in may replace one or more of the milk feedings. Tender meats, cereals, and butter are next added, then vegetables. The patient should be kept for several months on a mixed, non-irritating diet, and must for a long time avoid acid fruits, alcoholic drinks, rich foods, condiments, and sweets. Rectal feeding may well supplement the milk diet, and must be used exclusively if the stomach is intolerant or there is hemorrhage or a fresh perforation.—(*Van Valzah and Nisbet in "Diseases of the Stomach."*)

Chronic Constipation.—One of A. L. Loomis' favorite prescriptions was:

℞ Ext. Nuc. Vomicæ..... gr. xij
Ext. Aloes .....
Ext. Colchici Aceticæ.....
Calomel .....
Ipecac ..... aa gr. xx.

M. et div. in pil. No. XX. Sig. One at night.

Cholecystitis in Typhoid.—Da Costa treated this by calomel in small doses frequently repeated, ice locally or poultices, whichever is most agreeable to the patient, counterirritation by turpentine stupes or iodine, morphine to relieve the pain, and circulatory stimulants as need arises.

Bronchitis in Children.—Solis-Cohen uses counterirritation to the chest, inhalation of creosote or formalin, calomel, gr. ¼ when needed, and:

℞ Tinct. Aconiti..... ♏ i
Tinct. Opii Camph..... ♏ ij
Vin. Ipecac ..... ♏ v.

Sig. Every two hours. He says that alcohol or quinine do little, if any, good.

Facial Neuralgia.

℞ Tincture of Aconite Root..... ʒiv
Chloroform ..... ʒiv
Alcohol ..... ʒiv
Oil Peppermint..... ʒi.

M. Sig. Apply with a camel's hair brush.

Ipecac in Atonic Dyspepsia.

℞ Tr. Physostigma ..... 6 parts
Tr. Ipecac ..... 1 part
Tr. Star Anise..... parts q. s.

M. Sig. Six drops in a glass of vichy, after each meal.

℞ Tincture of Ipecac.....
Tincture of Calumba.....
Tincture of Gentian ..... aa.

M. S. From fifteen to thirty drops after each meal, in two portions from half an hour to an hour apart, in a little water.—*Mathieu, Lyon Médical.*

Facial Erysipelas.

℞ Carbolic Acid ..... ʒi
Tinct. Iodine ..... ʒi
Alcohol ..... ʒi
Oil Turpentine ..... ʒij
Glycerin ..... ʒiij.

The lesions to be painted with this every two hours, and covered with gauze.—*La Presse Médicale.*

Copper Phosphate in Tuberculosis and Chlorosis.

℞ Neutral Acetate of Copper.... gr. 1.6
Crystallized Sodium Phosphate, gr. 5.6
Licorice and glycerin, q. s. to make one pill.

Two pills to be taken daily.—*Le Progrès Médical.*

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OF MEDICAL SCIENCE.

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SATURDAY, SEPTEMBER 22, 1900.

THE ACUTE INFECTIOUS ORGANISMS.

RECENT investigations are tending to alter our ideas relative to the modes of infection in those diseases which are caused by micro-organisms. It was assumed that any given micro-organism produced a disease which ran a typical course and induced similar pathologic changes in different individuals. The important fact that it is not necessary to account for great variations in a symptom-complex by assuming a mixed infection, but that one and the same organism is capable of assuming a double rôle, at least, is being more clearly recognized.

We present a study in this week's MEDICAL NEWS by Dr. Wasdin in which he shows that many organisms, especially those of yellow fever and of the plague, exhibit this dual action.

The study of yellow fever in man and in animals naturally produced led him to investigate the prevalence of several types of cases encountered in this as well as in many of these infections. He concludes from the facts gained from these experiences that the variations in the types of disease processes depend on the development of two inherent qualities in these organisms, those of toxicity and septicity. The former quality when developed produces the toxemias, the latter the septicemias. Intermediate between a perfect toxemia and a perfect septicemia, the latter unknown in these acute infections in man, there may exist a mixture of these conditions, sepsis always being secondary to a more or less accentuated primary intoxication.

Applying the facts derived from the study of this one acute epidemic infection, yellow fever, to the other infections, in the light of recent experimental knowledge, he arrives at the formulation of a law which governs the production of these different types, heretofore known, in yellow fever, as the *ephemeral, grave* and *siderante* types of the disease, and shows that these three types must exist, more or less clearly marked, in *all* the infectious diseases, being especially marked in those of epidemic character.

The expression of the belief that all the acute infections may be contracted from the respiration of the specific organisms is not startling, since this has been recognized as possible in the case of all of them with the exception of typhoid fever, plague and tetanus.

The recognition of the facts affirmed by the writer, that all cases of plague, not due to artificial infection by means of wounds of the integument, are primarily respiratory, and that the three types of plague are to be expected, the ephemeral, possibly ambulating cases, the grave or classic bubonic type, and the siderante type, must materially assist efforts made to limit any outbreak of this dread disease, a possibility not so remote in view of its rapid extension to this continent. The diagnostic recognition of the ephemeral and foudroyante cases of plague will present greater difficulties than that of the classic type, with buboes, still too much stress cannot be laid upon the importance of such recognition, for these cases are relatively of greater sanitary importance than those of the well-marked type. Regulations directed to the detection of plague at quarantine should include careful inquiry concerning all diseases of the respiratory tract and especially of any cases of "sudden death" or death after short illness. Ill-defined pneumonia and bronchitis should invite particular attention. The presence of glandular enlargements, buboes of considerable size, may be encountered, the patients offering no other evidence of disease. Careful bacteriological examination of the sputum in these suspected cases should be made, both by the ordinary methods and by mixing the secretion, preferably carefully dried and powdered, with the food or in the bedding of white mice, which are so susceptible to the acute infections. Of all the organisms closely resem-

bling bacillus pestis, there is not one that will naturally infect these animals. Such natural infection will corroborate results obtained by the practice of the ordinary and routine methods of artificial infection of animals, and will remove much of the skepticism, both lay and professional, as to the presence of the disease.

The expression advanced in this article, that typhoid fever belongs in this group of respiratory diseases and that the three cardinal types must be encountered also, is one of importance. The experimental work of Sanarelli was productive of the conclusion by that writer that the intestinal canal was not solely involved in typhoid fever, although this infection has been produced by mixing the bacillus typhosus in the food of rodents. The writer holds that the rapidly increasing literature of such cases must accentuate the statement that most cases of typhoid fever are primarily respiratory in origin, and he attracts attention to the futility of endeavoring in any community to entirely suppress the disease by the provision of filtered drinking-water only, while the supply for civic and household purposes remains contaminated, the use of which means the dissemination of the infective germ by dust-carriage in the streets and within the house. All water-supplies should be filtered, but more attention should be paid to that destined to be sprinkled on streets and lawns and for laundry and other household uses.

The detection of ephemeral cases of typhoid must also be extremely difficult and is of secondary importance only to the detection of such cases of plague. The prohibition of the unclean habit of expectorating on the streets and in public places, should be enforced in the interest of the public against plague and typhoid fever, as well as against pneumonia and tuberculosis. All of these acute infections may be respiratory diseases, therefore we should protect the vulnerable tissues of the lungs against the entrance of their specific organisms.

HOSPITALS AND LAY MANAGERS.

The troubles in the Board of Governors of the Hospital for the Paralyzed and Epileptic in England seem hardly worthy of so dignified a group of men. Their excuses and petty reasons for not allowing representatives of the medical staff confer with them on the subject of hospital management reminds us strongly of the attitude of a worthy board of fashionable women who "managed" an annual garden-party and incidentally a small hospital in a philanthropic city hard by. These good women would permit no medical representative upon their board and no wife or female relative of any of the staff among their number, "for fear of unpleasantness which might arise from possible criticism of the staff;" and yet the urgent petitions of the staff for the purchase of an efficient disinfectant were completely ignored at successive meetings, owing to the pressure of business anent the garden-party. When the board did occasionally give time to the discussion of the medical side of their charity it was to deplore, in the same tones with which they discussed their servants, the tendency of the staff to retire every twelve months.

That a medical staff composed of some of the ablest physicians in England should be subjected to like illogical exclusion from the hospital management and that the dignified governors of the hospital should place themselves in the position parodied by the feminine board referred to seems inexplicable to our minds.

The very existence of a hospital implies the willingness of good-hearted people to give their money and able physicians to give their services. The more eminent the physician the less time he has and no one would dream of asking him to render other than medical services to the hospital. The lay managers or directors of the board assume, for purely philanthropic purposes, the burden of the details of the management; but it is taken for granted that both sets of individuals are working for the same altruistic end, the good of the sick man. No one will for a moment deny that the physicians are the power by which this end is attained and that the lay managers are their assistants and cooperators. In other words, the principles of sanitation, the régime of diet, the methods of treatment, the manner of nursing must of necessity emanate from the physicians who by virtue of their busy lives must leave the details to be worked out under the direction of laymen.

This naturally puts the directors in positions of authority on all questions of routine management, and might with narrow-minded men lead to a usurpation of power that would seriously militate against the good of the hospital.

Most of the larger and best managed hospitals in America vest executive power in the medical staff, either in the form of a medical committee, or a representative, or the appointment of a medical man as chief executive officer of the hospital.

This is no concession to their claims, but is merely to save the other physicians time and energy.

That eminent physicians who are carrying on advanced scientific treatment should be obliged to beg for a voice in the management of the work of which they are the very impulse seems laughable. Whether or not the diet of the hospital in question was sufficient or the management satisfactory, the principle remains that the medical man must be free to advise and to cooperate with the directors of the hospital, and they in turn must be sufficiently in touch with the medical men who are serving the cause to be able to choose those with whom they can openly discuss all medical affairs of the hospital without hurting their feelings.

BACILLUS TYPHOSUS AND SEWAGE-DISPOSAL.

For several years past the modern system of sewage-disposal has been by septic tanks and bacterial filters made of coke or gravel. It was at first held that this modern improvement over chemical or land treatment of sewage effectually did away with all or most of the pathogenic bacteria. Sewage products treated by this plan were allowed to flow from the bacterial beds into rivers, with the idea that all infection was effectually disposed of. The persistence of epidemics of dysentery and typhoid led many to doubt whether this plan of sewage-disposal was as effective as was at first thought. A series of experiments was carried out in 1894 by Andrewes and Laws on the vitality of the bacillus typhosus in crude sewage before undergoing treatment for purification. Crude sewage was found to be not only an unfavorable medium for the typhoid bacillus, but certain sewage bacteria were directly prejudical to the growth of the typhoid germ. Nevertheless this was not as reassuring as it might have been, for it was discovered that, while the raw sewage was not a good growing medium, the typhoid germ maintained life for days and even weeks, and thus gave the bacilli excellent opportunity to pass beyond the sewage system, and develop in a more encouraging medium.

A little later in the same year Klein proved that the typhoid bacillus not only lived for weeks, but that the nitrate sewage, the kind most favorable for bacterial filter disposal, permits the greatest longevity to typhoid bacteria. In this light the coke-beds are storehouses, and we must infer that no bacterial sewage-disposal holds the sewage long enough to terminate the life of the bacillus typhoid coming to it in crude sewage, hence the explanation of the contagioned water supplies near or below the river discharge from large towns having a typhoid epidemic. To-day many English authorities go as far as to say that crude sewage is probably but little worse than river discharge from sewage-beds.

In a recent discussion of the whole matter in question, at the annual meeting of the British Medical Association (*Brit. Med. Jour.*, August 18, 1900), Dr. Houston detailed a series of observations that he carried out at the instigation of the London Common Council, on coke-bed filters at Crossness. On account of the extreme difficulty and impractibility of isolating the bacillus typhosus, he took the more common and more abundant bacillus coli and bacillus enteritidis sporogenes, one aerobic and the other anaerobic. He found that the so-called biological processes at work in the coke-bed had no appreciable effect on the reduction of the number of these bacilli, compared with the quantity found in crude sewage.

We therefore infer that the bacillus typhosus which is more resistant to the bacterial filter escapes destruction, thus we have striking proof that from an epidemiological point of view the present sewage-disposal by septic tank and bacterial beds is fully as dangerous as the old cesspool, the overflow and leakage of which have been responsible in the past for such frightful mortality. In closing the discussion, Dr. Houston held out some hope that the danger of contaminating river water by the effluent from bacteria beds would be considerably lessened if the discharge was passed over land or sand-beds similar to that done for the purification of drinking water. Unless sewage can be disposed of in the future in such a manner as to become inocuous, we must continue to expect epidemics of typhoid and dysentery wherever the possibility of contaminating the water-supply may exist. The present septic tanks and bacterial filtration-sewage system must be set aside or modified, so that it will cease being a menace to public health by arousing false hopes of security.

The Medical Center of America.—Dr. I. N. Love, editor of the *Medical Mirror*, removed to New York, as he terms it, "the medical center of America," September 15, 1900. The *Mirror* is to be published in St. Louis as formerly.

ECHOES AND NEWS.

NEW YORK.

Obituary.—Dr. Frank C. Merriam of 136 West Eleventh Street died September 16th, at Waterford, Conn. He was forty-six years old and a graduate of the University Medical College, class of 1880. He leaves a wife and three small children.

Telephone Burglar.—This species of malefactor is abroad. Under the guise of a kit of tools and the tale of repairs to the wire, he obtains entrance to houses and then leisurely ransacks them. Make him show his badge and if not then certain get his name, call up central and see if his name and number are authentic.

Charitable Bequests.—By the will of George D. Sweetser the following institutions are benefited: Home for Incurables, Woman's Hospital, House of Rest for Consumptives in Tremont, New York Infant Asylum, New York Society for the Relief of the Ruptured and Crippled, and the Skin and Cancer Hospital.

Pink Eye and the Baths.—Dr. Cary of the New York Eye and Ear Infirmary has decided that the public baths along the rivers' front are responsible for an epidemic of pink eye similar to the one which broke out in Brooklyn two weeks ago from the same cause. One hundred and ninety-six cases of the disorder were treated at the infirmary in one day.

Building at Columbia.—After several years of effort, the alumni of the several schools of Columbia University have succeeded in raising the necessary $125,000 for the erection of the second story of the University Hall. Work was begun last week and the building operations will be hastened, as it is the desire of the graduate associations to hold their annual reunion exercises next June in the memorial chamber of the new story.

Free Milk.—The free distribution of pasteurized milk, which has been carried on since July 17th by the Bureau of Charities in cooperation with the health authorities of the Borough of Brooklyn, was discontinued Monday. For nine weeks, during which time the plant has been in operation under the arch of the East River bridge on Main Street, there has been an average daily distribution of between 1600 and 1700 six-ounce bottles of pasteurized milk, prepared especially for children. Notwithstanding the unusually hot weather, the statistics in the office of the Board of Health show that the rate of infant-mortality has been lower than for the same period during the five years preceding, and some of this result is attributed to the distribution of the pasteurized milk. According to the official figures, the deaths among children under five years during three summer months of several years have been:

	From diarrheal diseases.	From all causes.
1895 (no milk)	1212	3206
1896 (no milk)	1197	3307
1897	990	2930
1898 (no milk)	1122	3092
1899	993	2909
1900	931	2858

If the milk could have been more widely distributed, the good results would doubtless have been more marked. Some of the thickly populated portions of the city were not reached at all. It is to be hoped that another summer the work may be conducted on a larger scale. All who are willing to help in defraying the unpaid expenses of the work for the past summer are requested to send their contributions to the central office of the bureau, No. 69 Schermerhorn Street.

Famous Patient Dies in Bellevue.—"Tommie" died in Bellevue Hospital September 16th of Bright's disease. He was well known at Bellevue for having undergone an operation by which his finger was grafted to his face for a nose, that organ having been eaten away by a tuberculous ulcer. The operation was performed by Drs. Lewis A. Sayre and Thomas Sabine of the College of Physicians and Surgeons, after others had agreed that the man's case was hopeless.

PHILADELPHIA.

Death from Broken Back.—Edward Knouff, a fireman, died recently at the German Hospital from injuries received in April, 1897. His back was broken by the fall of a stone. The case attracted much attention at the time.

Death from Circumcision.—A fifteen-day-old infant died from hemorrhage following circumcision by a rabbi last week. A physician was called after unsuccessful efforts to check the hemorrhage had been made for two hours. The child died five hours after the physician was called to see the case.

Pennsylvania Hospital.—A new entrance building is being constructed at a cost of $60,000. The kitchen in the basement is to be equipped with an electric air-blower and fan to remove the odor of the cooking.

Dr. Linnaeus A. Smith.—The death of this physician occurred September 12th. He was well known from his treatment of skin diseases by homeopathic methods. Some years ago he removed to Jamaica, after evolving a system of treatment to arrest the progress of leprosy. Jaundice contracted there led to his death.

Formaldehyde in Milk.—A milk dealer in Upper Darby has been held for a hearing on the charge of selling milk containing formaldehyde. The use of the drug is said to be quite prevalent among dealers in order to save ice.

Physician Robbed.—Dr. W. H. Klopp found upon returning to the city from his vacation that thieves had taken furniture, clothing, etc., to the value of $700 from his house during his absence.

Beulah Orphanage Case.—The Grand Jury has indicted Sheets and Sollenberger, religious enthusiasts, for the murder of a seven-months-old infant last July. The men conducted the "Beulah Orphanage" on faith-cure principles. A physician was called to the case too late, but the keepers' "consciences pricked them for faltering in faith" and they decided never to call another physician.

German Hospital.—The ambulance of this hospital was recently hindered by a teamster refusing to give the right of way. At a hearing the teamster was fined $5.00. Upon his statement that other teams prevented his turning out the fine was remitted and he was discharged after a severe reprimand by the magistrate.

Free Hospital for Poor Consumptives.—This organization is still endeavoring to secure a building of its own. It now has under its care 31 patients distributed among four hospitals in the city and one in the Adirondacks. During the first six months of this year 116 patients were cared for at an expense of $4600. The general hospitals are practically closing their doors to consumptives, even those for whom they are paid not being desired.

Sanitarium Season Ended.—The Children's Sanitarium at Red Bank has closed the most successful season in its history. The admissions for the 73 days were 180,670. The institution comprises a hospital, soup-house, infants' bath-house, swimming pools, etc.

The Galveston Relief Fund.—This fund now amounts to over $45,000 for the Permanent Relief Committee in addition to other funds which have been started by individuals and firms. Benefits are to be given by several theaters and two train-loads of supplies have been sent. Dr. J. V. Shoemaker in behalf of the Philadelphia and Medico-Chirurgical Hospitals offered the services of 25 nurses to be sent at once if they were needed.

Greek Commander Offended.—The captain of the Greek warship "Miaulis," now in port here, was greatly incensed by the quarantine physician as the vessel came up the Delaware. He states that contrary to the laws of peaceful nations the physician would not accept the count of the crew as given him, but insisted on lining them up and counting them himself. It is stated that the authority in question is a new incumbent.

CHICAGO.

Post-Graduate Medical School.—The capital stock of this institution has been increased from $20,000 to $40,000.

Mount Sinai Hospital.—A hospital bearing this name has been incorporated by Drs. Rudolph Menn, George M. Silverberg, and Adolphus E. Berting.

Boulevard Sanitarium.—An institution of this name has been incorporated with a capital stock of $2500 by Drs. Harry Jay and Wellington P. Stewart, and W. Clark Allen.

Dr. Ochsner.—Dr. A. J. Ochsner has been appointed Professor of Clinical Surgery in the Medical Department of the University of Illinois (Chicago College of Physicians and Surgeons).

Health Department of Chicago.—This department has been awarded one of the grand prizes at the Paris Exposition for its exhibit of blanks, charts and other forms in use at the office of the department.

Control of Drainage Canal.—Controlling works at the junction of the river and the sanitary canal are favored by the Health Department, which deems such works necessary. At the present time it requires from eight to twelve hours to shut the gates at Lockport and stop the current, and during this time the garbage and sewage are prevented from taking their natural course through the canal, and the health of the city is thereby endangered.

Tribute to Dr. Schmidt.—The Board of Trustees of Michael Reese Hospital has adopted resolutions upon the death of Dr. Ernst Schmidt, who served that institution with great efficiency for the period of twenty years.

Mechanism of Dislocations of Hip.—Dr. Oscar H. Allis of Philadelphia, as the invited guest of the Chicago Surgical Society, will give a demonstration (upon the cadaver) of the mechanism of dislocations of the hip and their reduction, by manual effort and without previous tenotomy of the capsule, in the amphitheater of Rush Medical College at 8 P. M., October 5th. The annual dinner, at which Dr. Allis will be the honored guest of the Society, will precede the demonstration.

Cremation.—Popular prejudice against cremation is gradually decreasing in Chicago. Evidence of this is not lacking. The people are becoming more liberal on the subject and are getting over the idea of horror that used generally to attach to incineration. Less than fifteen years ago there were three crematories in the United States and they were scarcely used. At present there are nearly fifty scattered throughout the country, and the number is increasing every year. They are in the larger centers of population, where the demand is greater and the facilities for successful operation are better. The crematory at one of the cemeteries in this city exemplifies in a great measure how fast the prejudice is falling away. Since the erection of the plant in December, 1893, the records show that 616 bodies have been incinerated.

Chicago in Professional Education.—Statistics show that Chicago is fast becoming the professional school center of America. There are twenty medical colleges alone. There is no reason why Chicago should not lead in this respect. A medical college needs a large city to supply patients for the training of students, and the hospitals furnish such an opportunity and make possible the study of a greater variety of diseases. This is the reason why London, Berlin, Paris, and Vienna are great medical centers. The large cities also draw to them the greatest physicians, as it is there that the practitioners can earn the largest fees, and these men are glad to devote some of their time to giving lectures to students. In the same way the methods of legal procedure can best be learned in a large city. With such metropolitan advantages, together with the fact that Chicago is so near the center of population of the country, there is every reason to expect that its usefulness in this respect will increase constantly, and the city will become the American center for legal and medical instruction.

Papyrus Ebers.—For twenty-three hundred years Hippocrates of Kos has been known to the world as the "Father of Medicine." This distinction, however, has been wrested from the ancient Greek by the discovery and translation of an early Egyptian papyrus treating of the subject of medicine, with date so remote as almost to place Hippocrates within the ranks of modern physicians. English medical literature is about to be enriched by the translation of this papyrus, generally admitted by Egyptologists to be the oldest book devoted to the science of medicine extant. The work is known to scientists as the Papyrus Ebers and is supposed to have been written during the reign of Bicheres, a king of the fourth dynasty, 4688 to 4666 B. C. Thus the original document is nearly 7000 years old and it contains the written genesis of the art of healing. Although brought to light in 1873, no complete translation of the papyrus Ebers has been made. The document is carefully preserved in the library of the University of Leipsic, and it remained for a Chicago man to make the first English and the only complete translation. The work was undertaken about a year ago by Dr. Carl H. von Klein of Chicago, a well-known student of the Oriental languages and the author of a number of medical works, among them a book on the "Medicine of the Talmud." His English translation of the papyrus Ebers, a volume of several hundred pages, will soon be ready for the press.

GENERAL.

The Plague at Glasgow.—There has been a distinct increase in the number of plague cases at Glasgow. Five were discovered in one day. The total now is about 25.

Women Doctors in Austria.—An imperial decree issued September 15th admits women to practice as physicians and chemists on the same conditions as men.

Obituary.—Dr. Dennis Dowling Mulcahey died September 12th at his home in Newark after an illness of a few days. He was born in Tipperary, Ireland, in 1848, and studied medicine before coming to this country.

Galveston Reports.—The State Health Officer, Dr. Blunt, believes that there is now no danger of an epidemic. The city Board of Health held a meeting this week and adopted a resolution voicing the same views. Emergency hospitals have been established in every ward for the treatment of the sick and wounded. The Ursulin Convent has been converted into a great general hospital for the reception and care of patients who are seriously ill, with a full corps of physicians and trained nurses. All public and private hospitals are filled to their capacity with sufferers. Medical supplies are still much needed.

Harvard Items.—Professor William James is again at the Nauheim baths in the hope of further regaining his health. It is not decided whether he will pass the coming winter abroad or in Cambridge.—Professor W. T. Porter, of the Department of Physiology, will be abroad during the next school year. The success of the new practical course in physiology which he has organized has been pronounced.

German Naturalists and Physicians.—The seventy-second annual meeting of the Congress of German Naturalists and Medical Men took place this week at Aix-la-Chapelle, September 16th-22d. Among the papers read were "Development of Scientific Medicine," Prof. J. H. Van t'Hoff of Berlin; "The Neuron in Anatomy and Physiology," Prof. Verworn of Jena; "The Neuron Doctrine from the Pathologic and Clinical Standpoint," Dr. Nissl of Heidelberg; "On the Development of Biology," Prof. Hertwig of Berlin; "On the Development of Pathology," Prof. Chiari of Prague.

Tri-State Medical Society of Alabama, Georgia and Tennessee.—The twelfth annual meeting of the Tri-State Medical Society will be held in Chattanooga Thursday, Friday and Saturday, October 11, 12 and 13, 1900, during the reunion of the Army of the Cumberland and the Spanish-American War Veterans. A fare of one fare for the round trip will doubtless be given the latter from all parts of the country. The South Eastern Passenger Association has already given this rate and the other associations will take up the matter shortly. A large attendance is expected and an unusually good program is in prospect. All desiring to present papers should send title to the secretary, Dr. Frank Trester Smith, Chattanooga.

Medical College Crippled.—The storm caused a loss of probably $70,000 to the buildings of the

State University in Galveston. The medical branch of the institute was situated there. The Brackenridge Building which was recently erected at a cost of $45,000, was wrecked, and the other buildings were greatly damaged, all of them being unroofed. The session was to have opened on September 26th. A meeting of the regents was held at Galveston on Monday and steps taken to accommodate the students in some manner. If it is found that they cannot be accommodated at Galveston they will probably get room in the main buildings of the university at Austin temporarily.

Obituary.—Dr. Hunter McGuire, who was chief surgeon of Stonewall Jackson's army during the war, and one of the most eminent surgeons in the South, died at Richmond, Va., September 19, 1900. Dr. McGuire was the President of the American Society of Surgeons. At the outbreak of the war he was attending the University of Medicine of Philadelphia. He left at once and came to Richmond and enlisted as a private in the Confederate army. Before long he was promoted to be Medical Director of the Second Army Corps. In 1865 he was elected professor of the Virginia Medical College, holding the chair until 1880. He organized St. Luke's Home for the Sick, in Richmond. In the International Medical College of 1876 he was elected Vice-President. The University of North Carolina conferred upon him the degree of LL.D. He was the author of several medical works and of an account of the wounding and death of Stonewall Jackson.

Pennsylvania State Medical Society.—The fiftieth annual meeting of the State Medical Society met this week at Wilkes-Barre, September 18, 19, 20th. The attendance was large, over 300 members registering by Thursday morning. The social features were very pleasant, the Luzerne County Medical Society proving itself a most thoughtful host. The scientific program was of high order. We will present the proceedings in full in next week's issue of the Medical News. The following officers were elected for the ensuing year: President, Dr. Thos. D. Davis of Pittsburg; 1st Vice-President, Dr. W. B. Ulrich of Chester; 2d Vice-President, Dr. L. H. Taylor of Wilkes-Barre; 3d Vice-President, Dr. A. A. Eshner of Philadelphia; 4th Vice-President, Dr. M. L. Kirk; Secretary, Dr. C. L. Stevens of Athens; Assistant Secretary, Dr. W. L. Pyle of Philadelphia; Treasurer, Dr. G. B. Dunmire of Philadelphia. The place of meeting will be Philadelphia; the time, the third Tuesday in September, 1901.

Vaccination and Malpractice.—A physician employed by the Board of Health of New Bedford, Mass., as a public vaccinator has recently been subjected to an annoying criminal prosecution for vaccinating a child five months old. The charge was assault and battery. It appeared that the defendant, while engaged in the work of vaccinating in a tenement district, visited the home of a Mrs. B., and ascertained that her six-year-old boy had not been vaccinated. He thereupon vaccinated the lad without any objection on the part of the mother, who, however, remarked to him at the time, "You won't have to vaccinate my baby, will you?" The doctor answered that he thought he would, and in response to further objections by the mother told her that she would have to settle them with the Board of Health. He then proceeded to vaccinate the baby. It was proved without contradiction that the mother, notwithstanding her remonstrances, bared the infant's arm for the operation; and the court acquitted the defendant on this ground, holding that it was convincing evidence that the complainant, although undoubtedly reluctant, had finally consented that the child should be vaccinated.

Lodge Doctor.—A medical controversy, growing out of the willingness of certain doctors to treat the members of fraternal and benevolent societies at reduced rates, is about to be carried into the courts of Massachusetts at Springfield. The Hampden County Medical Association has expressed its disapproval of this practice, insisting that no special arrangements for charging less than the ordinary fees should be made with these organizations, but the societies seem to have found no difficulty in securing the services of other physicians who agreed to treat their members for a stipulated sum per annum. Thus far there was no room for litigation. It appears, however, that a patient who was sent by one of these so-called contract physicians to the Mercy Hospital in Springfield was refused admission to that institution unless the doctor in attendance withdrew from the case, which he finally consented to do for the sake of the patient, who required treatment which could be afforded only at a hospital. A suit will now be brought to ascertain whether the hospital staff could lawfully take this action under its charter, which provides that all patients shall be treated there who are brought to the institution by reputable physicians.

No Hydrophobia in England.—The State Department has received from Lord Pauncefote, the British Ambassador, a memorandum as to the importation of dogs into Great Britain. By enforcing the strictest regulation in regard to muzzling and the importation of dogs the disease of rabies in dogs and hydrophobia in man has been practically stamped out in England. Under the present ruling of the Board of Agriculture licenses must be obtained for the landing of dogs in Great Britain and a penalty of £20 and the possible seizure of the dog is enforced when a license is not obtained. Masters of vessels are liable to prosecution if dogs are landed illegally, and cannot accept dogs for shipment to Great Britain unless the license is shown at the port of embarkation. Imported dogs are isolated

for from four to six months and are moved about only upon license from the board. When taken out for exercise they must be properly muzzled and in charge of competent persons. The memorandum says: "The experience of the board has clearly shown that the frequent movement of pet dogs to and from the Continent involves this country in serious danger, inasmuch as a pet dog may become infected with rabies without the knowledge and despite the utmost care on the part of its owner. It is therefore a matter of great importance to owners of dogs in Great Britain that dogs from abroad should only be admitted in instances where it has been satisfactorily established that some useful purpose will be served by their admission, or where a pet dog would otherwise be separated from its owner for a prolonged period. Pet dogs should not be taken abroad and thus exposed to the risk of infection, excepting cases of real necessity."

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, September 8, 1900.

THE SOUTH AFRICAN HOSPITAL SCANDAL—ACCUSATION BY MRS. RICHARD CHAMBERLAIN—DISPATCH OF A COMMISSION TO SOUTH AFRICA TO INVESTIGATE THE NATURE AND PREVENTION OF THE EPIDEMIC OF TYPHOID FEVER AND DYSENTERY IN THE ARMY—RESULTS OF THE VACCINATION ACT ABOLISHING COMPULSION—NO DIMINUTION IN VACCINATIONS—IRISH POPULATION STATISTICS.

Public attention is still riveted on what the lay press call the "War Hospital Scandal." The latest contributions of importance are the statements of Mrs. Richard Chamberlain, sister-in-law of the Colonial Secretary, who went out early in the campaign and nursed in the hospitals around Cape Town. According to her, "Every word that Mr. Burdett-Coutts said, and much more, is true." The base hospitals at Cape Town, where everything necessary was at hand, and which ought to have been in as good condition as the London hospitals, were worse than the field hospitals. No attempt was made to clean them before they were used, with the result that the patients had to be covered with insect-powder to keep off the vermin. Although the scandalous state of affairs was brought under the notice of the military authorities, they did nothing. The nursing staff was inadequate—one sister to every 175 men for night and day. Yet there were any amount of sisters in Cape Town who had come from Johannesburg and would have been glad to have accepted situations.

The Government has decided to dispatch immediately a commission of experts to South Africa to investigate the nature, cause and prevention of dysentery and typhoid fever which have been so fatal to the soldiers. As usual they are waking up late in the day to a sense of their responsibilities and are learning a little in the dear school of experience. In the House of Commons, when the war was beginning, Sir Walter Foster proposed the appointment of a sanitary commission to assist the military authorities in maintaining the health of the troops, but the Government in its superior wisdom rejected his suggestion. The Commission consists of Dr. W. J. Simpson, Professor of Hygiene in King's College, London; Professor Notter of Netley, and Mayor Bruce. Professor Simpson's career eminently fits him for his appointment. In 1881 he was made medical officer of health for the town of Aberdeen, which appointment he held until 1886, acting also as lecturer on hygiene at the university. He was then appointed medical officer of health for Calcutta. He is the author of several valuable papers on public health matters and visited Egypt during an outbreak of cholera. He prepared a report on his visit for the English Local Government Board. His career in India was attended by considerable success and he is an authority on anticholera inoculation.

The death of Sir William Stokes at Pietermaritzburgh removes from the Dublin profession its most prominent and distinguished surgeon. He was a member of a family famous for generations in medicine and well known also in other branches of science. His father was the celebrated physician, William Stokes, who did such admirable work on the subject of diseases of the chest. His grandfather was Dr. Whitely Stokes, who also filled a prominent position both in the profession and in public life. He was a member of the Society of United Irishmen, but left that body when its method became revolutionary. Wolfe Tone wrote of him he was "the very best man I have ever known." Sir William Stokes has been professor of surgery at the Royal College of Surgeons for nearly thirty years. His method of amputating at the knee-joint—a modification of Gritti's—is known as Stokes' operation. He made many other valuable contributions to surgery and also possessed considerable literary power. Referring to his presidential address on surgery at the meeting of the British Medical Association in 1882, the *Boston Medical and Surgical Journal* said it produced "an unmixed expression of delight and proved him, as a medical orator, scarcely, if at all, second to Sir James Paget." In a city of eloquence he was famous as an after-dinner speaker.

The new Vaccination Act which abolished compulsion has not proved injurious, as was expected. Exemption is granted in the case of the children of parents who declare before a magistrate that they have a conscientious objection to

vaccination. In 1898 previous to the passing of the Act the number of children vaccinated was 500,314; in 1899, after it was passed, 669,349. This increase cannot be explained by an increase in the number of births which were only 5000 more in one year than another. The proportion of successful vaccinations to births has risen from 54.2 to 72.1 per cent. It seems that the disappearance of what many Englishmen regarded as harsh and oppressive measures of compulsion, repeated fines, etc., has diminished the objection to vaccination.

The report of the Irish Registrar General for 1899 illustrates the old story—continued depopulation by emigration. While the natural increase of population—that is to say, excess of births over deaths—was 24,201, the loss by emigration was 41,232, the decrease in population during the year being thus 17,031. With this report some very instructive demographic facts for each of the years from 1880 to 1899 are issued in the form of a chart. In 1880 the marriages were less than 4 per 1000; they are now 5 per 1000. In 1880 the deaths were almost 20 per 1000; they are now only 17.6. But against these figures must be placed the fact that the birth-rate has decreased in the same period from 24.7 per 1000 to less than 23. In 1889 the non-Roman Catholic marriages were 6.06 per 1000 and in 1898, 6.31; the Roman Catholics were 4.09 and 4.53, respectively. Thus the marriage-rate is 2 per 1000 greater amongst other sects than Roman Catholics. The fall in the birth-rate is most remarkable. It shows that the Irish race, proverbially prolific, is involved in the modern tendency to a diminished birth-rate. The emigrants were mostly in the prime of life and went principally to the United States.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

HISTOLOGY OF PLEURITIC EXUDATES—SYNOVITIS OF THE KNEE—DIFFUSE ANEURISM OF THE EXTERNAL ILIAC—ENUCLEATION OF FIBROMATA UTERI—PERMEABILITY OF THE PLEURA TO SODIUM SALICYLATE—HEMORRHAGIC INTESTINAL NECROSIS—PRIMARY PNEUMOCOCCUS PERITONITIS—THE VISCERA IN THEIR RELATION TO POISONS—RECOVERY FROM APHASIA.

WIDAL and RAVAUD at the Société de Biologie, June 30, 1900, said that only the exudates of cancerous pleurisy had often been subjected to careful histological examination in the expectation of finding cancer-cells, while the products of ordinary serofibrinous cases had been neglected. Their conclusions are drawn from fifty-six cases, to the effect that examination of the scattered cells in the fluid is capable of giving valuable pathological and clinical data. By exploratory puncture with a sterile needle several cubic centimeters are withdrawn, defibrinated before or after coagulation, centrifuged, stained after having spread the emulsion upon slides with a platinum loop and not as with blood by means of a glass "spreader." The following seem to be the distinguishing features of the various forms of the disease: (1) Idiopathic pleurisy (still sometimes called "cold" and proved by Landouzy to be practically always tuberculous) has almost exclusively small lymphocytes, mingled often with red cells, appearing usually about the ninth day. It would be instructive to observe the exudate earlier. (2) Pleurisy in the presence of tuberculous caseation and excavation of the lungs presents very few elements even after centrifuging, a few red globules and lymphocytes; more numerous polynuclear cells, old, deformed, degenerated, fragmented nuclei filled with neutrophile granules; also a few altered degenerated mononuclear leucocytes, and some amorphous masses without nuclei, which are commonplaces in all exudates. (3) In the pleurites of cardiac, renal, cancerous or pressure origin we find large exfoliated endothelial cells, red blood-cells, and lymphocytes surrounding them and enabling a diagnosis at once. They may occur single, double or in large sheets, a veritable desquamation. (4) Streptococci pleurisy shows only neutrophile polynuclear cells with deformed nuclei. (5) Pneumococci pleurisy has red cells, lymphocytes, many lymphocytes, many mononuclear cells, chiefly of endothelial origin, some inclosing in the cell-body polynuclear cells. (6) Typhoid pleurisy is always bloody and may have large mononuclear leucocytes. (7) Eosinophile cells were found in a case of tuberculous, of typhoid and of parasitic pleurisy. Thus it may be seen that practical significance attaches to the examination of the exudate in inflammation of these serous membranes.

POTHERAT, at the Société de Chirurgie, July 18, 1900, outlined a case of thickening of the synovial membrane of the knee which simulated movable foreign body. All the typical symptoms of the latter were present and the supposed body was so much in evidence and function, so much limited, that arthrotomy was done. The free exposure of the joint-cavity gave to view a large thickening of the synovia in the deep folds beneath the triceps femoris and two others opposite, beneath the quadriceps femoris. All were easily ablated. Full recovery of function followed. Histologically the growths were tuberculous.

ROUTIER reported a case of diffuse aneurism of the left external iliac. The patient was sixty-four years old, in perfect health up to March, 1900, except for moderate early signs of bladder trouble necessitating the occasional use of the catheter. That month he was attacked by slight pain about the left sacro-iliac joint and a little later by sudden pain in the left groin while on a voyage. A median laparotomy was done, and the tumor, which had given all the signs of aneurism, was found to be such. The external iliac

was ligated as close to its source as safe and the femoral artery high up. Several clots were turned out and hemorrhage controlled by clamps left *in situ*. Recovery was well under way when on the tenth day after the operation trismus followed by death set in, without any local or systemic prodromata. Death was due to tetanus, although the speaker had not seen any cases of it in his hospital or private practice.

Tuffier said that enucleation of fibromata is a just, conservative procedure, and preferable to hysterectomy for the same trouble. He had collected reports of 560 cases, going to show that the operation had passed the experimental stage. His own experience had been fifteen cases, with one death from septic peritonitis. The abdominal operation in this class of work he considers the best and the technic, although more laborious and tedious than simple removal of the whole organ, is such as to make resort to it usually advisable.

Widal, at the Société Médicale des Hôpitaux, July 6, 1900, said that with Ravaud during studies of the histology of the serofibrinous exudates in pleurisy, he was led to experiment as to the permeability of the pleura to sodium salicylate, as was undertaken by Raymond, Tourlet and Castaigne. The author and Ravaud used the drug in doses of 0.30 gram injected first beneath the skin and next into the pleural cavity. It was established that the salicylic acid appears in the urine more rapidly than either methylene blue or iodide of potassium. In the normal individual the elimination occurs completely, on an average in fifteen hours; in some cases in eighteen and even twenty hours. The total excretion oscillates between 0.17 and 0.20 grams. The greatest amount excreted is usually during the first six hours. The two experimental injections (subcutaneous and intrapleural) may be made at very short intervals. The quantity given and voided was weighed very exactly. The permeability of the pleura studied in five case of pneumonic pleurisy the rate and dura- follows: In one case of primary tuberculous pleurisy the permeability was decreased; in one case of pneumonic pleurisy the rate and duration were altered, but not the total elimination; in three cases of mechanical pleuritis, cardiac or renal, there was either no change or a slight augmentation in two and slight decrease in one.

Castaigne in the discussion said that he had investigated the permeability of the pleura to sodium salicylate not only from within outward, but from without inward, by means of subcutaneous injections. Of twelve cases of pleuritis subjected to this procedure, in seven salicylic acid was recovered from the exudate and in five no traces whatever of it were found. Cryoscopic examination of the pleuritic fluid and of the blood serum in these cases showed that the freezing-point was alike in each when the permeability (from without inward) was lost, but slightly different when it was preserved. In comparing these results with clinical facts, the conclusions drawn are that when the permeability is preserved the pleurisy is in the course of invasion and solution; when it is absent the inflammation is established. The practical application is that before doing thoracentesis one should wait until the moment when the subcutaneous injection of the sodium salicylate no longer affects the pleural cavity contents.

Hirtz, at the meeting of July 13, 1900, reported the autopsy findings of a case of hemorrhagic intestinal necrosis due to venous obliteration. The patient was a female, thirty-one years old, afflicted with abundant ascites accompanied by the appearance of collateral circulation, and three days after admission by the sudden onset of violent vomiting and general abdominal pain, and followed by coma and death about thirty-six hours later. At the post-mortem examination were found an old adhesive obliterating portal phlebitis, discoloration of fifty centimeters of the small intestines due to a reddish bloody fluid exudate into their lumen, thickening of the coats of the mesentery and obliteration of the mesenteric veins. A comparison of these and the clinical facts of this with those of other similar cases published seem to indicate the possibility of diagnosticating this condition during life. Its theoretical clinical picture would be as follows: Pain would be an early and important sign; never absent, more or less severe; awakened and aggravated by palpation, or spontaneous and acute, radiating or situate in the renal lumbar, epigastric, or hypochondriac regions, if in the course of a hepatic disease, overshadowing the symptoms of the same; simulating appendicitis, renal, biliary and intestinal colic, intestinal obstruction, etc., and often diagnosticated solely by exploratory incision. In all cases of primary venous obstruction the patients have died in what may be called the *terminal syndrome*. After several weeks of indefinite abdominal distress there comes a violent sudden onset of intense general, at times tearing pain, vomiting, anxious expression and prostration, resembling somewhat a peritonitis. But the lesions are not those of a peritonitis. In fact, bacteriologically the intestinal contents are crowded with germs, fewer and fewer in the coats as we pass outward, and finally the exudate in the general peritoneal cavity has been found germ-free.

Menetrier reported two cases of primary pneumococcus peritonitis in the adult. This disease occurs oftener in children than in adults. His first case seen eight years ago is of interest only from a bacteriological standpoint. A male, thirty years old, suddenly by night was seized with abdominal pain, dying after eight days' agony. Pure cultures of the pneumococcus were obtained from the fluid exudate of the peritoneum, but no focus of their invasion was obtained. The other patient showed many interesting clinical features. A male, thirty-five years old; same onset; later development of peritonitis, followed by subsidence; then pain and

abscess-formation on the sole of the right foot; serosanguinous evacuation; loss of dorsalis pedis pulse; similar abscess in the left hand; decrease in the left radial pulse; recrudescence of the peritonitis; death. The autopsy revelations were: General peritonitis, infarcts of the spleen and kidneys, obliteration of the left radial and right dorsalis pedis, posterior tibial and popliteal arteries by old and of the Sylvian artery by recent clot; all yielded the pneumococcus; normal heart; the peritonitic exudate contained the same germ, but as the post-mortem examination was performed late the bacillus coli communis and the staphylococcus albus were mixed with it. The patient had had a cough fifteen days before these symptoms began.

M. G. Brouardal, at the meeting of July 20th, explained experiments and their results conducted by Thoinot and himself as to the effect of certain visceral substances upon poisons. The method followed was to triturate a known weight of a given viscus with a definite quantity of the poison and inject the mixture into guinea-pigs. The poisons employed were strychnine sulphate, chlorhydrate of morphine, arsenious acid and sulphate of atropine. The results of the experiments are that the organs may neutralize, enhance or not affect the specific action of the drugs. The kidney and the liver appear to be especially active in neutralizing the toxic effects. Muscle tissue renders inert a rather large dose of strychnine, has little effect on morphine and atropine and augments arsenic. Cardiac substance is neutral as to atropine, but increases the virulence of strychnine, morphine and arsenic in descending scale. Lung tissue has no effect on arsenic and feebly combats all the others. Cerebral matter is neutral as to atropine, strongly antagonizes strychnine and morphine, but augments arsenic greatly. Without drawing definite conclusions from these illustrations, they may profitably be compared with those by Teissier (Lyons) along the same lines with toxins.

Antony reported a case of partial recovery from aphasia of eleven years' standing. The patient, a man, thirty-five years of age, had suddenly been stricken with right hemiplegia. Four days afterward consciousness returned, but he was totally unable to answer questions except in a few meaningless monosyllables no matter what the query might be. There was no word-blindness and no word-deafness. The case appeared to be one of cortica motor aphasia with conservation of sung words due very probably to the destruction of the top of the third left frontal convolution. The state of this man had not changed at all till June last, when by some unexplained way he regained certain words.

Water Famine in the Bronx.—The recent dry weather has brought about a dearth of water for the Bronx region. It is feared that typhoid may break out as the water is of the poorest quality. The Commissioner is seeking some relief.

SOCIETY PROCEEDINGS.

CANADIAN MEDICAL ASSOCIATION.

Thirty-Third Annual Meeting, Held at Ottawa, September 12-14, 1900.

The thirty-third annual meeting of this Association was held in the Academic Hall of the University of Ottawa, Ottawa, Canada, under the presidency of Dr. R. H. Powell.

Eliminative and Aseptic Treatment of Typhoid Fever.—Dr. W. B. Thistle of Toronto University in contributing this paper stated that it is now seven years since he introduced this plan of treatment of typhoid fever to the profession. Dr. Thistle claimed that this form of treatment had been misrepresented by Professor Osler and others, as he had never held the opinion that the eliminative and antiseptic plan could rid such organs as the liver and spleen of the bacilli lodged in them. When once the typhoid germ gains access to the alimentary tract, its multiplication occurs with extreme rapidity and the intestinal contents teem with countless numbers of them. These are not confined to the intestine, but are to be found in almost every organ of the body. He is of the opinion that the draining of the intestinal walls, following upon the action of a purgative such as calomel and magnesium sulphate, would tend to get rid of some of these bacilli in the intestinal walls, but would not effect their exit from the liver, etc. In many instances he thought the treatment had been imperfectly applied without a clear conception of the underlying principle. Under this plan Dr. Thistle has never had a fatal case of hemorrhage, whatever hemorrhage occurred having been always very slight. He has also had few perforations. Twenty per cent. of the death-rate is from perforation and hemorrhage. In Toronto this plan of treatment is universally adopted. Statistics at the Toronto General Hospital show that from 1893 until the present time there have been 833 cases in that institution with 56 deaths —a mortality of 6½ per cent. under this plan of treatment.

In discussing the paper, Dr. McPhedran of Toronto stated that he had watched Dr. Thistle's work from the time of the appearance of his first paper on the subject, but could not agree with all his conclusions. He did not think that it lessened diarrhea, tympanites, fever or delirium. He considered that Dr. Thistle was harboring the idea that purgatives in typhoid was a new discovery with him; this was not so. Twenty-five years ago he gave these for the first ten days at least. In addition to this he used to give carbolic acid and iodine, and in a certain class of cases he thought he had used the exact treatment. Another class would then come along, in which that treatment had no effect whatever. He considered that the general toxemia that existed could not be eliminated through the bowel. It

had to be done through the kidneys and skin. In reply Dr. Thistle emphasized the fact that he was not trying to eliminate bacilli and toxins from the glands, but that in clearing out the bowels he was trying to eliminate toxins and not bacilli from the body.

Sarcoma of the Right Nasal Fossa.—This paper was presented by Dr. Perry G. Goldsmith of Belleville, Ont. The patient was a man, thirty-eight years of age, a farmer, with an unimportant family and personal history. He consulted the doctor on August 4th in regard to severe frontal headache. Growths and some bone was removed from the nose. After this the swelling and pain in the eye rapidly increased, so that it was seen to project far forward, downward and outward. The growths in the nasal fossa were curetted and sent to Professor Anderson of the Trinity Medical College Pathological Laboratory, who pronounced them of sarcomatous nature, of small round-celled variety, with the walls of the blood-vessels thin and poorly developed. The discharge from the nostril was of an odor similar to that emanating from cancer of the uterus. Up to ten years ago Bosworth had collected forty of these cases. Dr. R. A. Reeve, Toronto, stated that a number of years ago he had presented before the Association a paper on the same subject. He directed attention to the importance of examining the naso-pharynx in diseases of the orbit. He cited a case similar to Dr. Goldsmith's. In his case there was little pain, but an examination of the nose revealed the tumor.

President's Address.—The hall was well filled on the afternoon of the second day when the president, Dr. R. W. Powell, arose to deliver the annual presidential address. He recited a few reminiscences when on former occasions the Canadian Medical Association had met in the Capital City in 1871, 1881, 1889, and 1893. Reference was made to the South African war in order to show the unsatisfactory condition of affairs which permitted other colonial surgeons to practise their profession in that land without hindrance, whilst Canadians were debarred from the same privilege. An earnest and united effort on the part of the profession throughout the entire Dominion of Canada in an endeavor to bring about interprovincial registration would facilitate matters in the direction of securing these privileges for Canadian professions in other parts of the British Empire. The hackneyed subject of tuberculosis was lightly touched on; whilst a very important matter relating to the profession, that of a medical defence association, was dealt with at considerable length. Dr. Powell favored the formation of such association, and later on in the proceedings nominated a committee to look into the question and report on the advisability and practicability of forming a Dominion association of this character.

Experiences in the South African War.—Dr. G. S. Ryerson addressed the gathering on the above subject. He dealt first upon the experience gained with the modern bullets. The very latest returns show that 936 officers and 11,701 non-commissioned officers and men had been wounded, of whom only 732 have died of wounds received in action, which is ascribed to the septic character of the bullet and the prompt attention and antiseptic treatment. Dr. Ryerson then described the nature of the wounds received. Referring to the reported use of poisoned bullets, this was not the truth, as the tarnish or verdigris probably accumulated in transit through the barrel. He also doubted the fact of explosive bullets being used. The Boers made use of thousands of the Martini-Henry, a heavy bullet, which caused great destruction of soft parts necessitating amputation. There were few amputations in this war. Kendal Franks performed but 20 amputations in 2000 cases. Whilst abdominal section in wounds of the abdomen was mainly inadvisable, he saw one case where the results were excellent. He spoke highly of the magnificent work of the Royal Army Medical Corps. Dr. Roddick spoke of the sacrifices of Dr. Ryerson in proceeding to South Africa at his own expense to carry out the work of the Red Cross Association. While in England recently he made it his special business to enquire of returning Canadian soldiers as to the hospital management in South Africa, and although he had spoken to many of these, he had failed completely to find a single Canadian who had anything but praise for the hospital arrangements in that country.

Our Race and Consumption.—Sir James Grant, Ottawa, considered it an important fact and one worthy of consideration that races had been born on this continent, lived and entirely disappeared, leaving mounds in the West and other traces in Florida and elsewhere of their undoubted existence. Thus far there is no information as to the exact cause of the disappearance of these races. It remains for the Anglo-Saxons to see whether they will prove more successful than their predecessors in establishing themselves on this continent. He referred to the loss of 3000 lives in the fair province of Ontario in 1898 by consumption alone, and deplored the fact that the people were not as yet alive to their danger. Sir James endorsed the legislation at the last session of the provincial parliament designed for the purpose of assisting municipalities in the erection and maintenance of sanitoria for consumptives.

Tabes Dorsalis.—Owing to the unavoidable absence of Dr. Allen McLane Hamilton, New York, through illness, the President read this paper. Looking back over a number of years, the writer finds that most good has been done where little or no medicine has been given. He has found rest by suspension and persistent cauterization of the back good treatment. Syphilis cannot be traced in more than fifty per cent. of the cases.

The Physician's "Vaster Empire."—The subject matter of this paper read by Dr. John Hunter, Toronto, dealt with the questions of sanitary science, education, social purity and medical mis-

sions. As regards sanitary science the purport of the paper was a plea for the broader and freer attainment of principles of sanitary science and their application in the building and constructions of our homes, schools, churches, etc. No dwelling-house should be constructed except under the supervision of an architect and a physician versed in sanitary science. In the matter of sanitary science, architects had improved wonderfully in the past ten years. Another important question was that of our educational system —the mental and physical health and development of school children. The best way to secure physical vigor and high mentality was surely within the province of the physician to grapple with and study. In all forms of social purity and impurity, physicians should speak *ex cathedra* against every form of vice and immorality The boys and the girls of the family should be enlightened, by the fathers and mothers respectively, as to their sexual proclivities at proper periods. In medical missions, he referred to the vast field for medical missionary work in foreign countries.

Tuberculous Lesions.—At the evening session of the first day, before a crowded assembly hall, Mr. Edmund Owen, London, delivered the "Address in Surgery." At the very outset he stated that his remarks would deal with tuberculous lesions as the surgeon meets them day by day in the hospital ward, in private practice and in the operating-theater. Discussing the origin of the word clinical, *cline,* a couch or bier—and if a bier, why not a mortuary table, he referred to the pathologist, saying he considered his (the pathologist's) thought to be only of the dead tissue. The surgeon sees the human tree during its life but rarely follows it after death. The student does clinical and pathological work at different times and he is enabled to follow the case straight from the ward to the laboratory. Study of the fresh specimen is best; for the specimen taken from formalin is no more like the condition than canned salmon is like fresh-run fish. He would not hinder experimental research work; it is absolutely essential. The life of a man is of more value than a sparrow or many guinea-pigs. It would be almost impossible to overestimate the direct value of experimental laboratory work. Strumous and scrofulous are terms devoid of meaning and we now call tubercle by its proper name. There are three great factors in connection with tuberculosis which the public must be made acquainted with, *viz.*, (1) the disease is communicable, but they must be allowed a little time before they accept this statement and fact; (2) the disease is preventable; this follows almost as a corollary to the first statement; (3) the disease is curable.

Excision of the Knee Joint.—Dr. A. Primrose, Toronto, described Kocher's method of dealing with tuberculous knee-joint and recited the histories of a few cases in which he had obtained excellent results. The operation was made clear by blackboard illustration. At the conclusion of the demonstration Dr. Primrose was highly complimented by Mr. Owen.

Recent Pathologic Studies of the Blood.—Dr. L. H. Warner, Brooklyn, contributed a paper on this subject. He premised his statements by asserting that there was a necessity for experiments for the progress of pathology. His experimental researches were directed along three lines of enquiry, *viz.*, experiments, observation and individual observation at clinics in hospitals. The examination of the blood in most cases is of more importance than the examination of the urine. Dr. Warner gave the formula of a new staining solution which he had found very practicable. The blood specimen should be prepared in the usual manner. The slides are heated in a hot oven to 98° F., immersed for one minute in a one-per-cent. aqueous solution of methylene blue, washed in water, then in one-per-cent. alcoholic solution of eosin, washed again with water, and then in a one-per-cent. solution of Bismarck brown.

The Treatment of Hernia.—Dr. F. J. Shepherd, Montreal, said it is now some twenty years since surgeons began to do these operations by the open method. The methods of operation are almost as numerous as surgeons, but there are certain general principles underlying all operations: (1) The necessity for excision or obliteration of the sac; (2) closure of canal; and (3) union by first intention. Some also hold that alteration in the direction of the canal is necessary. Bassini's is the operation performed by Dr. Shepherd, although not always successful. Absorbable sutures are the best and if antiseptic they are to be preferred. A suture that will last for three weeks is all that is wanted. He has now used chromicized catgut for some time. He never washes out the wound and thinks it better to dissect out the sac with the knife than to tear it with the fingers. He never uses a drain. For the last two years he has used rubber gloves in all his surgical work on the abdomen and he considers his results have been better since he used them. In these operations the mortality is practically *nil.* Operations on children are now our most successful cases. Formerly they were not advised except when strangulation existed. In discussing this paper and the cases recited, Dr. Lapthorn Smith stated that his experience lay mostly in ventral and umbilical hernias, some of them being so large as to require twenty stitches. During the past two years he has abandoned silk and resorted to catgut, chromicized, which he always prepares himself.

Dr. Shepherd in reply said if there is a little oozing in the wound, he introduces between the edges of the wound a probe and lets out the accumulated serum, and he finds that this is quite efficacious, as by this method the chance of any germs entering is minimized.

Syphilitic Gummata of the Spinal Cord.—This case, reported by Dr. F. W. Campbell of Montreal, was a very interesting one. The patient was a highly neurotic individual and some time

before had suffered from insomnia of an aggravated character. Retention of urine and loss of power in the lower limbs were noted. The patellar reflex was about normal. The loss of power in the lower limbs was absolute. The pulse varied from 80 to 96; the temperature never rose above 99° F. The stomach remained in fairly good condition all the time. A consultant from New York was brought on and a diagnosis was established of tumor which might be sarcomatous or syphilitic, of the spinal cord situated about the first lumbar vertebra. The advice of the consultant was to give 500 grains of iodide of potash per day, at first commencing with one dram three times a day. Dr. Campbell recited the daily history of the patient while getting under the large dose and its gradual withdrawal. The patient is alive to-day and in good health, having recovered complete control of his lower extremities.

Address in Gynecology.—Dr. Wm. Gardner of Montreal delivered a very practical address upon the mistakes in diagnosis and treatment in midwifery and gynecology. We often learn more from our mistakes than from our successes. Correct and accurate diagnosis depends mainly upon a sense of touch which is only to be attained by long and patient practice. The advantages of examining on a firm table instead of on a couch or bed were emphasized. The patient's rectum should always have been emptied before presenting for examination. It is best to empty the bladder by catheter when the patient is in position, as it is in this way that you will notice any discharges, etc., and an uncontaminated specimen for examination is thus obtained. Where tension is present in the muscles of the abdomen, if you make a series of circular movements over the lower abdomen, gradually narrowing your circle, you will be able to overcome whatever rigidity may be present. In physical examination Professor Gardner urged caution in the use of the sound. In pelvic examinations he has made it a point to examine the position of the kidneys as well. In the diagnosis of pregnancy mistakes are often made. The patients are few in whom the diagnosis cannot be made by careful examination of history, signs, etc. Many women are probably inaccurate as to date. Dr. Gardner illustrated all his points by reciting cases to the point. He instanced one in particular where he once found a woman in his office on her hands and knees in the throes of a twin labor, a fellow practitioner having failed to recognize the pregnancy had tapped the gravid uterus and drawn off a considerable quantity of liquor amnii. The paper closed with an interesting account of mistakes in extra-uterine pregnancy.

Abdominal and Pelvic Disturbances in Women.—Dr. Clarence Webster of Chicago in this paper spoke of symptomatology in women often overlooked by the general practitioner. He then took up the normal relationship of the abdominal and pelvic contents and proceeded to account for intra-abdominal pressure, the pelvic organs being to a great extent maintained in their respective positions by reason of the pressure of the abdominal and pelvic walls. The average specific gravity of the viscera was very little more than that of water; that of the liver was 1.5. There is no proof that the mesenteries act as constant supports or were ever meant to be such; and the main factor in sustaining the viscera is the strength of the abdominal wall and pelvic floor. Local weakness of the abdominal wall has been fairly well described under hernia while general weakness of the abdominal wall has been described as pendulous belly; and general weakness is an exceedingly rare condition. As to the question of etiology, the condition is found in women who have borne children; on examination of the great majority of women, there is some degree of separation of the recti muscles in the region of the navel. All evidence later on may disappear but permanent widening remains. The results of all this is unavoidable enteroptosis; and it is generally to be found in women who have worn corsets. A common displacement is that of the right kidney. Dr. Webster dwelt upon the diagnostic symptoms of these conditions and then proceeded to describe the operation he performs for their relief. This consists in bringing the edges of the two recti into apposition. He first performed an operation for the relief of the condition in November, 1898, and since that time 41 cases have been operated on and the results have been most satisfactory.

Address in Medicine.—The advance in knowledge, said Prof. Frederick C. Shattuck of Boston, in his opening remarks, has brought about our relation to things. There is noticed a subdivision of labor in every branch of industry. Specialization has taken place in the science and art of medicine. In specialization lies the cleavage between medicine and surgery; and nowhere has the line been more closely drawn than in England. Anesthesia greatly enlarged the bounds of surgery. Twenty-five years ago there was not a pure surgeon in America. Belly-ache is now a surgical disease. The heart is practically the only viscus which remains the exclusive organ of the physician. In this country the general practitioner is clinging to obstetrics for family practice. In some of the larger centers there is a tendency to the specialist in obstetrics, who will preside at the accouchement and the family physician then step in as attendant throughout the puerperium. Pure gynecology scarcely exists today; and pelvic tinkering is suffering a rapid decline. The great bulk of major gynecology belongs to abdominal surgery which in turn belongs to the general surgeon. Gynecologists should study general surgery and become general surgeons first. The field in medicine is so large that no man can grasp it all in a lifetime. Professor Shattuck referred to specialism in neurology and dermatology. Nose and throat should comprise one specialty. Desire on the part of some to escape the hurly-burly of general practice may be a cause in throwing them into

specialism; and then special knowledge draws larger fees. Ophthalmologists get more for removing a speck of dust from the eye than the general practitioner. When we have specialists for the diseases of young life, why not also have a specialty for the disease of old age. Professor Shattuck closed his able address by affirming that specialism in medicine had come to stay.

Gastric Hemorrhage.—Dr. George E. Armstrong of Montreal, in reading this paper, stated there was a fairly well-determined field in which surgical interference may be of use in hemorrhage of the stomach. Hemorrhage occurs in fifty per cent. of gastric ulcers and is fatal in eight per cent. These cases are arranged in two groups, the acute and the chronic. Rodman has reported 31 operations for frequently recurring or chronic hemorrhages with 6 deaths. Dr. Armstrong has operated five times for gastric hemorrhage, one being a chronic case. In one of these cases the patient was getting along nicely after the operation, when the patient expired suddenly and on post-mortem examination thrombi were found in the branches of the pulmonary artery.

Uterine Retroversion and Prolapse.—Dr. A. Lapthorn Smith of Montreal referred to the proper and most successful management of procidentia uteri in elderly women between seventy and seventy-five years of age. The majority of these patients have an ulcerated cervix. After confinement the uterus remained enlarged and the pernicious habit of keeping women too long on their backs has a tendency to produce backward displacement. Dr. Smith feels certain that women who have been cured of this distressing condition will have little difficulty in persuading others to avail themselves of the treatment. In correcting this deformity, Dr. Smith makes a small incision in the abdomen and performs ventrofixation. After that the vaginal canal is narrowed by a large anterior and posterior colporrhaphy. In selected cases he also amputates the lower half of the organ and stitches the vagina to the upper half. He considers ventrofixation, if properly performed, a most reliable means of fastening up the uterus. The operation has given him the most complete satisfaction of any he has ever performed, especially when combined with amputation of the cervix and posterior colporrhapy.

Gasoline as a Surgical Detergent.—Dr. Bruce, Toronto, contributed something highly original, that is, the use of gasoline for cleansing dirty, greasy hands and for preparing the field of operation before surgical procedures. It is much better than soap and water and brushes; and he now constantly carries a small bottle of the substance in his surgical bag. A report from Dr. Wm. Goldie, Toronto, showed its effects upon germs and germ life. A word of caution is to be borne in mind; as it is a highly inflammable substance, it should not be used in any quantity near an exposed light; moreover, it is painful when applied to the eyes or ears. It is useful in cleansing sutures of accumulated blood and dressing powder, as it enables one to locate the stitches better. Dr. J. C. Mitchell, Enniskillen, Ont., stated that he had tried gasoline recently as a detergent in two very severe threshing-machine accidents, where the parts were covered with oil and grease and dirt, it was very satisfactory, as he was able to get perfect cleanliness and both wounds healed by first intention.

Dilatation and Prolapse of the Stomach.—A paper with the above title, contributed by Professor McPhedran of Toronto, dealt principally with prolapse. This condition rarely occurs alone, but is associated with prolapse of other abdominal organs. There is generally present, as well, some degree of dilatation; the abdomen may be prominent or flat or even retracted. He related the case of a man, aged 51 years, a manufacturer, who had been ailing for two or three years. The stomach was below the umbilicus. He was directed to massage the abdomen very thoroughly and to practise abdominal gymnastics. Through this treatment combined with dietetics, he has been restored to health and is able to resume business. Another case of a woman, aged thirty-five years, who had been the subject of recurrent attacks of vomiting for two years. The symptoms were detailed; massage and abdominal gymnastics ordered with satisfactory results. The different ways of examining the stomach were described; and in concluding Dr. McPhedran spoke of the benefits of a change of scene in treating these cases.

Physical Training.—Dr. B. E. McKenzie, Toronto, gave a very interesting account of the methods employed by him in correcting deformities in his orthopedic hospital in the city of Toronto. The paper was illustrated by lithographs showing improvements in spinal deformities and other abnormalities. The paper embraced the results of his observations for thirteen years past, and was ample justification of the benefits derived from gymnastics in the correction of lateral curvature, clubfeet, etc. He had found physical training also especially valuable in hysteria and chorea.

Inter-Provincial Registration.—Dr. T. G. Roddick, Montreal, read the report of the Committee having this matter in hand. A new feature was that allowing of representation on the proposed Dominion Council of homeopaths, as, according to the law of Ontario, these had their vested rights and so must have similar interest in any Dominion Council. The homeopaths, then, will be allowed three representatives, which will be equivalent to the representation from any one province of the Dominion. Their term of office will be four years. This will not, however, be inserted in the bill as such, but will appear under "any other school of medicine having legal recognition throughout Canada," as the British Medical Council would not recognize any such body. Dr. Roddick stated that the bill would be introduced at the next session of parliament; and that the respective members of the Committee must bestir themselves before their respective provin-

cial parliaments, as these must sanction the measure before it could be finally acted upon by the Dominion parliament.

Cerebral Abscess.—Dr. James Stewart, Montreal, reported two interesting cases of abscess of the brain situated in the tempero-sphenoidal lobe, and referred to the usual existing aphasia which was present in both of these cases, *viz.*, simple ability to name objects. The first case occurred in a young man, twenty-two years of age, who had otitis media following an attack of influenza. Some six weeks afterward an abscess formed. The abscess was diagnosed as confined to this area simply on account of the peculiar aphasia, the simple inability to give the name of a pen when that object was presented to him. The patient was operated on by Professor Bell who secured two ounces of pus. Meningitis, however, set in and the patient succumbed. The second case was a girl twenty-one years of age. She had had ear trouble for a great many years with very severe pain at times. She, too, had difficulty in naming objects and finally she could not name any object whatever. She died suddenly a few hours before the operation was to be performed. On post-mortem two abscesses were found, one skirting the upper border of the lobe and the other about the center of its substance. In reply to a question of the President Dr. Stewart stated there is what is called the naming center and when this is destroyed that particular form of speech defect is present. The cases were aptly illustrated by a diagram.

Gangrene of the Leg Following Typhoid Fever.—Dr. H. H. Chown, Winnipeg, reported two cases of gangrene following an attack of typhoid fever which had recently come under his observation. In the first case the patient had the classical symptoms of typhoid, the spots appearing at the end of the first week and being very numerous. Great pain set in in the calf of the leg, with collapse, while the limb was cold and bloodless. Cutaneous sensibility was lost over the leg. The third day after the complication set in, the part involved included the lower third of the leg on the inner and lower half on the outer side. Operation was performed at the upper and middle third of femur. Patient stood the operation well. The temperature before the operation was 102.6° F., pulse, 120; on the following day the temperature was normal and the pulse 110. On the tenth day the flaps were united. There was a rise of temperature a few days later—a relapse, with hypostatic congestion of the lungs. On the fifth day hemorrhage of the bowels. The patient is now a picture of health, weighing 200 pounds. The second was a somewhat similar case in which the blood reacted early and promptly to the Widal test. The gangrene began in the first case on the eleventh day of the disease; in the second on the ninth. Keen reports gangrene on the fourteenth day. The gangrene in the second case extended to the upper and middle third of the leg. The leg was amputated and prompt union took place throughout. In discussing the cases, Dr. R. B. Nevitt, Toronto, mentioned a similar case coming under his observation during the past summer. Here gangrene occurred about the third week of the fever, and the patient was seen about a week or ten days afterward. Amputation was performed through the middle third of the femur. He also referred to a case of gangrene of the arm following an attack of pneumonia recently observed by him.

Notes on Atropine—Dr. R. D. Rudolf, Toronto, read an interesting paper with the above title, illustrating by means of a chart the action of the drug on animals and inferences drawn therefrom of its therapeutic uses. He finds that the drug directly stimulates the heart, and thus the blood-pressure is markedly raised. He considers that the maximum single dose of 1/20 of a grain, as laid down by Witherstine, is too large unless used as an antidote; and one ought never to give more than 1/100th of atropine sulphate at one time except in emergencies. He also referred to its action in catarrhal pneumonias of children and its employment before anesthesia to ward off danger. Dr. A. D. Blackader, Montreal, discussed the paper and congratulated Dr. Rudolf upon it and hoped that he would pursue his studies further upon the same subject to find out the effect the drug would produce in controlling vomiting after anesthesia. He considers, however, that strychnine and not atropine is the most powerful heart tonic we possess. He thought that late experiments would throw doubt upon atropine being a direct stimulant to the heart muscle; and he thought it questionable to administer a drug that will paralyze nerve-endings when we want to stimulate the heart's action.

Lantern Slide Demonstration of Skin Diseases.—Dr. George H. Fox, New York, conducted this demonstration which the members of the Association appreciated most highly. The great majority of the skin lesions shown were of syphilitic origin, and as they appeared on the canvas Dr. Fox described the histories of the cases. One in particular attracted attention from the disfigurement of the nose and face—a huge mass of excrescences, which Dr. Fox was able to get rid of in the course of two or three months, leaving only a slight superficial scar. He laid down a timely word of caution in treating these conditions, that when the patient was run down and emaciated through large doses of mercury or iodide of potash, not to keep on pushing these drugs, but to desist for a period and endeavor to build up the patient's general condition, and then return to the specific treatment and the results would be found to be more material. At the conclusion of the demonstration, which will rank as one of the features of the meeting, Dr. Fox was accorded a hearty vote of thanks by the Association.

Nerve Suture.—Dr. F. J. Shepherd showed an interesting case, a boy of sixteen, who at the age of six sustained a severe cutting of the nerves

of the brachial plexus below the cords of the brachial plexus. At that time, ten years ago, Dr. Shepherd dissected out each nerve and united their respective ends by suture. All did well with the exception of the musculo-spiral, and as a consequence the lad has very little control over the extensors of the forearm.

Systemic Treatment of Disease of the Eyes.—Dr. George H. Burnham's method of treating syphilitic and other diseases of the eye is to combine the hypodermatic use of pilocarpine with the administration of the usual remedies. Under this method no such result follows in other plans of treatment, and with this a permanent curative result is got. The treatment has a wide application. Whether iodide of potash and mercury or the iodide alone is given internally in suitable cases without satisfactory results, if the pilocarpine be added, good results will follow.

Mental Sanitation.—Dr. R. W. Bruce Smith, physician to the Brockville Asylum for the Insane, contributed a scientific paper with the above title. It was a plea for prophylaxis in insanity, and he thought that much would be accomplished in this direction in the twentieth century. He stated that insanity is on the increase in Canada and thinks it can be duly ascribed to the fact that there have been no preventive measures employed. In order to accomplish good in this direction we must seek either to lessen the demands on or to strengthen the resisting power of the brain. He condemned intermarriages in families and also amongst those of a deranged mentality; and as fifty per cent. of the cases of insanity are heredity, the descendants of these should be careful in contracting marriage-ties. He referred to a portion of one county in Ontario alone where indiscriminate marriage and intermarriage have become most fruitful of insanity; and he has seen several members of one family from that locality inmates of the same institution at the same time. He considers that the day may yet dawn when we will give the same attention to the rearing of children as we now give to the breeding of horses. Speaking of farm-life and the tendency it has to melancholy, he thought this class of the community should receive education in participating more in the enjoyments of life and not continue to rot in domesticity. An upheaval in the sentiment and surroundings of the rural homes would work wonders in prophylaxis principles.

Election of Officers.—The following officers were elected: President, H. H. Chown, Winnipeg; Treasurer, H. B. Small, Ottawa; General Secretary, F. N. G. Starr, Toronto.

Winnipeg was chosen as the next place of meeting.

Eczema of the Scalp of Infants.

℞ Acidi Salicylici..... 1.0
Zinci Oxidi..... 5.0
Lanolini ..... 30.0.
M. Ft. Unguenti. Sig. For external use.

REVIEWS.[1]

Surgical Pathology and Therapeutics. By John Collins Warren, M.D., LL.D., Professor of Surgery in Harvard University; Surgeon to the Massachusetts General Hospital. Illustrated. Second edition with an appendix containing an enumeration of the scientific aids to surgical diagnosis, together with a series of sections on regional bacteriology. Philadelphia: W. B. Saunders, 1900.

The appearance of a second edition of this justly popular work is to be noted with pleasure. Though the field of pathology is well occupied by such an endless array of text-books and manuals that to stand in the front rank requires more than ordinary merit, it is not going too far to claim for the present volume a place among the foremost. Features perhaps that have contributed to its popularity are the judicious combination of therapeutics and morbid anatomy and the incorporation of the line of treatment to be pursued with the description of each pathological entity. Coming from so distinguished an authority these discussions are of the greatest value and contain much that is interesting and suggestive to the specialist as well as to the student or general practitioner.

In this edition the author has embodied the important changes in an appendix which replaces the old one and the chapter on antiseptic surgery. Under the heading of "Scientific Aids to Surgical Diagnosis" he enumerates the more recent methods which may serve as short cuts to diagnosis and gives in addition a series of articles on what may be termed regional bacteriology. The various vegetable parasites liable to be found in different portions of the body, such as the peritoneum, the genito-urinary tract, the mouth, etc., are described, their characteristics noted and suitable methods for their recognition, identification and extermination indicated.

The illustrations, so essential a factor in the value of a book dealing with this branch, leave little to be desired and in many instances offer striking evidence of the recent advances in color printing, although the author, especially in the sections on tumors, has not always resisted the temptation to portray exaggerated and bizarre cases rather than what is typical of everyday practice.

Mikroskopie und Chemie am Krankenbett. Für Studirende und Aerzte. Bearbeitet von Dr. Hermann Lenhartz, Professor der Medicin und Krankenhaus-Direktor in Hamburg. Dritte wesentlich umgearbeitete Auflage. Berlin: Julius Springer, 1900.

In this little volume the whole subject of clinical microscopy and chemistry is adequately yet succinctly discussed. After an introductory chapter on the manipulation of the microscope the

first section is devoted to the consideration of the animal and vegetable parasites occurring in the body in health and disease. Nearly twice as much space is given to the latter as to the fomer, the general principles of bacteriological technic being first briefly described, special methods of staining and culture receiving treatment *in extenso* under the headings of the various specific micro-organisms. This is followed by a section on the blood which sufficiently covers the field of pathology and diagnosis, and by another on the examination of the expectoration which is most praiseworthy in its thoroughness. In Part IV. the investigation of the secretions of the mouth, stomach-contents and feces is described while by far the largest portion of the book, comprising nearly one hundred pages, is given up to the subject of urinalysis. The sixth and last section embraces the microscopy and chemistry of exudates, transudates and the contents of cysts of various descriptions.

In point of conciseness and clearness nothing is left to be desired, while a sufficient variety of methods and formulæ is given to make the book a useful and complete laboratory guide. In this, the third, edition, the text has been fully revised and numerous additional illustrations have been interpolated.

A Text-Book of Practical Therapeutics. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With special chapters by Drs. G. E. de Schweinitz, Edward Martin and Barton C. Hirst. New (8th) edition. Philadelphia and New York: Lea Brothers & Co., 1900.

The appearance of eight editions of a book within nine years means merit of more than an ordinary order and the fact that the present volume has reached this distinction is a sufficient index of its value and the general appreciation it has met. In the present edition no change has been made in the arrangement of the subject matter which is still divided into two main parts, drugs and diseases. In the former there is presented for each remedial agent of accepted utility an adequate and essentially up-to-date *résumé of* its physiological action and therapeutics, the author condensing into a few paragraphs the conclusions of all the observers whose work has bearing on the subject and giving the facts in a nutshell. The section on diseases is no less valuable and at a glance one may run over the different methods of treatment available for any particular affection and select the most appropriate. The value of the work for quick reference is greatly enhanced by the very complete system of cross-indexing. In its new form the text has undergone revision and been made to conform not only to the United States Pharmacopœia, as it has done, but also to the British Pharmacopœia of June, 1898. Some articles on new drugs have been added and also several illustrations; the most notable picture in the book is a full-page colored plate depicting in glowing colors five roosters' heads and intended to illustrate the action of ergot, which, however interesting it may be from a poultry fancier's point of view, or as a monument of modern lithographic skill, seems a trifle out of keeping with the very practical tone of the book in general.

Fractures and Dislocations of the Upper Extremity. By T. E. Platt, M.D., F.R.C.S. London: H. K. Lewis, 1899.

To quote the author's own words in the preface, this book is "almost entirely a reprint of a series of papers contributed to the *Medical Chronicle*, 1898." The work certainly gives evidence of painstaking records, a wide familiarity with literature, and the data from its statistics bear out all that has been maintained in special works on the subject, but nothing beyond this. A liberal reference and a free criticism of the methods of treatment, and of the mechanism of fractures is current throughout these pages, yet there is nothing of an experimental nature or practical application to substantiate the ground taken, only the tried and trusted having been applied. The one novel feature are the skiagrams, but poorly reproduced, and they in some few instances illustrate what the author maintains, that for personal inspection skiascopy is more satisfactory as it offers a kaleidoscopic view, whereas for illustration, several skiagrams from different points of view are necessary and these must be contrasted with skiagrams of the sound members.

This style of book can only appeal to those specially interested in this class of injuries.

Fractures. With an Appendix on the Practical use of the Röntgen Rays. By Carl Beck, M.D., Visiting Surgeon to St. Mark's Hospital and to the New York German Poliklinik; Formerly Professor of Surgery, New York School of Clinical Medicine; Consulting Surgeon to Sheltering Guardian Society Orphan Asylum, etc. Philadelphia: W. B. Saunders & Co., 1900.

The dedication of this book is a light upon its tenor and spirit, "To Wilhelm Conrad Röntgen, Without Whose Discovery Much of This Book Could Not Have Been Written", that is to say, it aims very directly to show the value, application, errors and deficiencies of the X-ray.

The other features of the book are of a high order and reliable in their doctrine. The appendix on the practical use of the Röntgen rays contains much information of great value born of close reading, careful experimenting and judicious interpretation. The book is well worthy of a place among the surgical works of our libraries.

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ORIGINAL ARTICLES.

MEDICINE AND SUPERSTITION.[1]

By G. W. GUTHRIE, M.D.,

OF WILKES-BARRE, PA.;

PRESIDENT OF THE PENNSYLVANIA STATE MEDICAL SOCIETY.

ONCE before, on the 13th day of June, 1866, thirty-four years ago, your honorable body assembled here in annual session. The records of that meeting are very interesting, when compared with the proceedings of your later sessions.

The place of meeting was in a hall over a furniture store, entered from an alley, and not much longer than the room now belonging to the Luzerne County Medical Society. The total attendance, including delegates and permanent members, was sixty-seven, to which were added the names of nine members of the local county society, not delegates. The entire membership of the Luzerne County Medical Society, which then included Lackawanna, was twenty. Of the delegates from the county, not one is in practice and only one, Dr. A. L. Cressler, is living. But what changes thirty-four years have wrought! The borough of 1866, with less than 10,000 people, has become a city of over 51,000 within its borders, and a suburban population of an equal number. The county has been divided and each division represents an active medical society, and their combined membership reaches one hundred and seventy-five. From an attendance of sixty-seven, your later sessions have had anywhere from two hundred and fifty to four hundred members present.

One moment let me pause for a thought of those—"lost to sight, to memory dear"—who have been called to their reward since last we met. Their names as far as reported are:

John Ashhurst, Jr., (1881) Philadelphia; Samuel P. Bartelson, (1879) Clifton Heights; Nathaniel W. Brown, (1890) Pittsburgh; John H. W. Chestnut, (1876) Philadelphia; Robert B. Cruice, (1879) Philadelphia; Alexander Craig, (1869) Columbia; Milton S. Erdman, (1894) Richland Center; Quintus C. Farquhar, (1882) California; Albert Fricke, (1862) Philadelphia; Robert G. Furst, (1896) Lock Haven; Robert M. Girvin, (1880) Philadelphia; William B. Hartman, (1882) St. Mary's; Columbus W. Krise, (1877) Carlisle; Edward Lyon, Sr., (1871) Williamsport; James McCarrell, (1878) Allegheny; John B. McCloskey, (1899) Mill Hall; David S. Marquis, (1863) Rochester; Charles S. Shaw, (1890) Pittsburgh; S. S. Towler, (1893) Marionville; Mark G. Whittier, (1892) Clearfield.

No better tribute can we pay them than to say in the words of our doctor-poet, Weir Mitchell:

> "To give what none can measure, none can weigh,
> Simply to go where duty points the way.
> Faith, honor, duty—duty calmly done,
> That shouts no self-praise o'er a victory won;
> One bugle note their battle call,
> One single watchword, DUTY—that is all."

Dr. Dennis, in his address of welcome to you in 1866 said, "We need your help to stay the flood of medical nonsense and knavery which seems to be sweeping over the land as with a besom, with redoubled energy, deluding and destroying the weak, the ignorant, and the foolish."

These words are very fitting to-day, for "the flood of medical nonsense and knavery" has risen to an astonishing height; what with Dowieism, and Osteopathy, and Christian Science; the divine healer, the magnetic healer, the fire doctor, the powwower—the honest medical man, especially if he be young, becomes disgusted and discouraged with his fellow men, and bewails the degeneracy of the times; but to such I would say, "Say not that the former days were better than these, for thou dost not inquire wisely concerning this." The history of the human family is a history full of machinations of the quack, the sorcerer, the charlatan. Let me direct your attention briefly to a few propositions which appear easily demonstrable: (1) There is no limit to human credulity. (2) Human credulity is so great that any pretense to cure, however ridiculous, has always found adherents. (3) That a method of healing that claims to be supernatural in its power, that surrounds itself with an air of mysticism, claiming some mysterious, magnetic agency not possessed by others, has always found followers in great numbers. (4) Numbers and intelligence of followers is no evidence of the truth of a method of cure; the most ridiculous and preposterous theories and methods have had hosts of followers, often from the intelligent classes.

There is no limit to human credulity. Carlyle once said, "England has twenty millions of people, nearly all fools," and it is surprising how far this remark of the cynical old philosopher applies to humanity in general. The three most sacred interests of the human family are the immortal soul, the almighty dollar, and the conflict with disease and death: religion, finance, and medicine.

> "All hail, Religion, maid divine!
> Pardon a muse so mean as mine
> Who in her rough imperfect line
> Thus dares to name thee."

[1] Address delivered at the fiftieth annual meeting of the Pennsylvania State Medical Society, held at Wilkes-Barre, Pa., Sept. 18, 19, 20, 1900.

But what will not people believe in thy name! What blind credulity was needed to make John of Leyden possible! Did ever fanatic or imposter propose a belief too ridiculous, or too wicked to find followers?

Much as men love their souls, and their bodies, it seems at times they love their money more—but how they are fooled! I need but to refer to John Law and his Mississippi scheme, to De Lesseps and his Panama Canal Company, or to Plunger Miller; Law, who bankrupted Paris with a scheme that existed simply on paper, De Lesseps who borrowed two hundred and sixty-five million of dollars from the French people, from which there was no return, and Miller who offered ten per cent. a week, five hundred and twenty per cent. a year, for money, and got it in enormous quantities. But it is in the matters of health and sickness, in the conflict with disease and death, that the human family has shown its greatest credulity, its greatest capacity for being deceived. And here I will appeal to the logic of events by briefly recalling the facts of history, which will, I believe, serve as a complete demonstration of my remaining propositions, and it shall be my purpose in this discussion to be entirely just and to

> "Nothing extenuate,
> Nor set down aught in malice."

Nor shall it be my purpose to inveigh against any so-called medical sects who are practising under legitimate conditions. For myself I see no justification for medical sectarianism; all honest investigators, all men liberally educated along medical lines, embracing the fundamental branches of medical education: anatomy, physiology, chemistry, therapeutics, pathology, bacteriology, surgery, and the practice of medicine—all these ought to be united under one banner in the contention against charlatanry, quackery, and deception of every kind. The establishment of State Boards of Medical Examiners, and State Boards of Health, where men of different faiths are cooperating, have a tendency to this end. The size of a dose of medicine is a little thing upon which to split, and retaining a distinctive sectarian title as a trade mark is certainly not becoming honest, scientific investigators.

First then let us momentarily consider Relics, Shrines, Apparitions—agencies supposed to be supernatural and religious in their character. Pettigrew says that to the people "Whatever is beyond their sagacity is assigned to invisible agency." In all ages, even at the present time, people have rushed in hordes to be healed by some relic of a saint, or where some apparition has been observed, or to some holy well or fountain, and, no doubt numbers have gone away relieved; stacks of crutches, and other evidences of cure left behind substantiate this statement, for under the influence of a strong, devout, religious impression, many ailments, functional or nervous in their character, have been relieved. But it is a source of the greatest gratification to the profession that the clergy of whatever name, are as a class, adherents of the true medical faith. Sorry it is that there are exceptions to this rule, that now and then we see the name of a person with the title "Reverend" quoted as subscribing to the virtues of some quack nostrum, or upholding some medical delusion—as osteopathy for example. But do we not also find occasionally a name bearing the title of M.D. associated with the same delusion, as when a doctor so far forgets his birthright as to become an adherent of Christian science or osteopathy? But, I repeat, that the great and noble army of religious teachers are with us and depend upon us in the time of their physical troubles, and you will bear me out in the statement that we have no more loyal, more devoted, more grateful adherents than they. Nor can we forget that we owe to a clergyman the most touching tribute ever paid to the medical profession; the character of Weelum MacLure, the Doctor of the Old School, as portrayed by the Rev. John Watson, Ian MacLaren.

The same superstitious reverence makes people believe in charms and amulets. The fire doctor, who takes fire out of a burn by blowing his breath upon it and murmuring some incantation, or the old woman who looks at the moon, and mumbling some unintelligible words, takes the warts from children's hands, are with us still. Amulets suspended from the neck, as bags containing sulphur or asafetida, are still worn to keep disease away; and the horse chestnut is carried for hemorrhoids, and the iron ring is worn for rheumatism.

History is loaded with the records of cures by these agencies, and there is scarcely a malady that has not had its cure. The charms that were most effective were those having something of the horrible associated with them—such as coffin nails, a bit of hangman's rope, chips from a gallows, spiders suspended from the neck, arsenic, or pieces of dried toad applied over the heart.

Another far-reaching delusion was the Royal Touch for Scrofula. So prevalent was this delusion at one time that the name "The King's Evil" was given the affection. The King who ruled by the grace of God would naturally be supposed to possess divine power. From the time of Edward the Confessor to the reign of Queen Anne, a period of seven hundred years, this belief prevailed.

One method was this: The patient obtained from his physician a certificate of diagnosis, or a statement that the patient was suffering from scrofula; then on certain days the sovereign would lay his hands on them, and at the same time give them a piece of money, usually of gold. Pettigrew says that during the reign of Charles II., in twenty years, from 1662 to 1682, no fewer than 92,107 persons were touched, and he further states that during this reign "more people died of scrofula than during any other period." A record is in existence, made as late

as March 30, 1714, during the reign of Queen Anne, showing her majesty on that date touched 200 persons for "the evil," among them the great lexicographer, Dr. Samuel Johnson, who was then four and a half years old. To show how groundless was this belief we have only to recall that this truly great man suffered from scrofula during his entire life.

But this delusion and many others have disappeared, and nought remains but royal touch pieces in museums to remind us of the credulity of the human family.

Passing by Mesmer, after whom mesmerism was named, and who claimed to cure patients with "manipulation aided by dimly lighted rooms and soft music." and Gassner, who was a cotemporary, we come to consider a delusion, originated by a fellow countryman, named Perkinism, or Elisha Perkins and his Tractors.

Perkins was born at Norwich, Conn., in 1741 He received a medical education, and for a number of years practised his profession successfully in Plainfield. In 1796 he invented his metallic tractors, which were three inches long and tapering to a point, one resembling brass, the other steel. With these he claimed he could draw diseases from the body; particularly local pains, inflammations, neuralgia of the head, face, and teeth, and rheumatism; this was done by applying the tractors over the painful parts and drawing them downward, for twenty minutes or longer. It does seem ridiculous, doesn't it? But ridiculous as it may seem, this method was recommended by the faculties of three institutions in this country; it received a favorable report from a Swedish body of investigators, consisting of twelve physicians and surgeons of the Royal Frederick Hospital; and in London a Perkins institute was founded under the presidency of Lord Rivers, which published cures to the number of 5000, certified to by eight professors, forty physicians and surgeons, and thirty clergymen. One writer says that the list of persons who claimed to have been cured by this agency amounted to an almost fabulous number. Perkins died in 1700, and in a few years the tractors fell into disfavor, and are now found only adorning museums, touching reminders that there is no limit to human credulity in matters pertaining to health and disease, and this was only one hundred years ago.

A cotemporary of Perkins was Cagliostro, the Italian charlatan. Perkins no doubt was an honest, self-deluded enthusiast, but Cagliostro was one of the most capable scoundrels the world had ever seen. He was born at Palermo in 1743, two years after Perkins. His right name was Balsamo. At the age of fifteen he ran away from school, was placed in a monastery, where he assisted the apothecary, and obtained a smattering of medicine that helped him perpetrate his future villainies.

Leaving the monastery, he traveled in almost every known country, practising the arts of healer, necromancer, nobleman, exorcist and spiritualist. In Arabia he was the guest of the Mufti of Medina, and the Sheriff of Mecca. In Malta he duped the Grand Master of the Knights of Malta, assumed the title of Count de Cagliostro, and obtained letters of introduction to the nobility in various countries of Europe. He married the beautiful Lorenza Feliciana, who aided him in his iniquities. In Germany he exhibited an elixir, which gave perpetual life and never ending beauty, claiming he was over two hundred years old, through the use of this agent. By his power as necromancer, he claimed to hold communion with celestial spirits; his victims were very numerous.

France was the theater of his greatest success for a time. Here he established "The Triumphant School of Wisdom," changed baser metal into gold, restored youth, and prolonged life indefinitely; among his disciples were the most noted members of the French Court, including Cardinal Rohan. A scandal connected with the theft of a necklace drove him from Paris after lying some time in the Bastille. His waning star failed to impress the British mind; Germany expelled him, and going back to his native Italy, he was arrested and received death sentence, which was commuted to life imprisonment, during which he died in a dungeon, in 1795, after an incarceration of eight years. But, now methinks, I hear you say, "Are we not better than they?" No, in no wise, for the nineteenth century has as many instances of medical delusions as any of its predecessors.

There was Samuel Thomson, founder of the "botanic school," who undertook to cure "all fevers, whether black, grey, green, or yellow," by decoctions of indiginous plants of the most depressing character, as lobelia; who when treating a case that was probably pneumonia, "puked the patient violently thrice." then put him to bed then puked and sweated him for three days until he was so weak he could puke no more. When Thomson asked the patient how far down the medicine had got, and the patient, indicating his chest, the quack replied that "it would soon get down and unscrew his navel." Death followed this treatment in three days, and Thomson was defendant in a suit of manslaughter, but was acquitted; this was in 1809. He had many followers, and Thomsonianism has become a name in medical history.

Time compels me to pass by a number of worthies, who in one way or another claimed great power as healers in the early years of the century, and I will come to a period nearer to our own recollection. Who has not heard of Francis Schlatter, the Divine Healer?

Francis Schlatter was an Alsatian peasant, with an ordinary education, a shoemaker by trade, who came to this country and settled in Jamesport, L. I. He had no bad habits, was a good shoemaker, paid his debts, was a glib talker, and claimed, at times, to have visions

In 1894 he turned up in New Mexico as the New Messiah, and claimed extraordinary power in curing diseases. In the summer of 1895 he went to Denver, Colo., calling himself the "New Messiah and the Healer," and from August 22 to November 13, 1895, it is stated that about 300,000 people visited him. On the last day he treated 5000 people. He left Denver, traveled south across the Rio Grande into Mexico with his mule, and went into the wilderness to fast. Some time after the newspapers contained the following dispatch: El Paso, Texas: Francis Schlatter found dead in the foot hills of Sierra Madre, S. E. of Casa Grande, State of Chihuahua, Mexico; death probably due to starvation." This simple statement of facts is more forceful, and tends more to substantiate my propositions than any additional comment I could make.

Bear with me while I speak of another Divine Healer who has been attracting a great deal of attention in another western city, Rev. John Alexander Dowie, the founder of Dowieism.

Dowie was born in Scotland fifty-five years ago, was educated in a Congregational Theological Seminary in Edinburgh. Was taken seriously ill of stomach trouble, and was told by his physician that recovery was impossible. He then sought relief in prayer, and reading the Scriptures, and claims he was instantly cured. He emigrated to Sydney, N. S. W., as a clergyman, but gradually drifted away from his church, until 1878, when he resigned. He then went to Melbourne, Australia, where he established the Free Christian Tabernacle, and taught in his own way. A little later he developed his divine healing theory. During an epidemic of fever, he went in among the afflicted, laid hands upon them, prayed, and he says, cured thousands. He also states that his fame became so great that all Australia praised his name. He came to America in 1888, landing in San Francisco, where he established missions and healed many; remained two years, and then went to Chicago. Here he established healing missions in many parts of the city, got into the courts many times, and four years ago founded a new church, named the Christian Catholic Church of Zion, calling himself the General Overseer. He has erected a tabernacle in addition to healing homes, and claims that last year 12,000 people came into his fold; and that his followers in Chicago, alone, number over 50,000. He has established a bank, a printing house, a land company, a lace industry, and a new town of Zion, at Waukegan, Wis., containing 6500 acres. His members pay a tithe of all their earnings to the church, and his financial resources are placed at two million dollars. During last month he started on a pilgrimage to the Holy Land, having made a vow that he would witness the sun rise over the hills of Jerusalem, at the dawn of the twentieth century.

One other divine healer so-called, however demands attention, namely Mrs. Mary Baker G. Eddy, the discoverer of Eddyism, or Christian Science, the most popular fad and delusion of the day. Some idea of the extent of this delusion may be gathered from statements made in the Christian Science Journal for December last, in which it is claimed that there are 370 Christian Science churches, and 100 other organizations in existence; in addition there are 100 reading rooms, and 30 institutes and academies where Christian Science is taught; several magazines are published, and churches are found in nearly every State in the Union, and in Canada, England, France, Germany, Australia, and Hawaii. Boston and Chicago are the great strongholds. In the former city the Mother Church has been erected at a cost of over $200,000.

It is claimed that 1,000,000 persons have received Christian Science treatment, and that the number of believers is over 400,000 in the United States alone. So much for the extent of the fad. Now a few words as to the founder or "discoverer," and its claims and practice. The "discoverer," Mrs. Mary Moss Baker Glover Pattison Eddy, the last three being the names of her successive husbands, is an old woman of 80, living at Concord, N. H., where she has a stately mansion, and another at Boston, Mass. She descends from an old New England family, and in childhood was fond of metaphysical studies, logic, etc. Like Schlatter, in her childhood, she heard voices calling her by name—"three times in an ascending scale," this continued for a year.

She was a member of the Congregational Church, an ardent advocate of woman's rights, and a practitioner of homeopathy. Like the Rev. John Alexander Dowie, her introduction to the new system was brought about by her recovery from a supposed serious illness, following a fall upon the ice; her physician had announced that there was no hope for her recovery, that she could not possibly live three days. Like Dowie, she then resorted to prayer and the Bible; opening the book she read of the palsied hand; she was immediately restored to health, arose from her bed, and appeared to her friends as one arisen from the dead. This was in the year 1886.

She then began a close study of the Scriptures, and at the end of three years published her book, "Science and Health, with Key to the Scriptures," which has had a marvelous sale, having gone through over one hundred and ninety editions, and is carefully protected by a copyright. This marvellous book, which has been spoken of by enthusiastic converts as "a rich word from our leader and teacher, our beloved Mother in Israel." (Galton.) That "tears away the veil which more or less has darkened the pages of Scripture and, endues them with the brightness which God's words should reflect." (Clarkson.) A book so sacred, that in their church service selections are read from the Bible and from the book alternately; further I am informed, that in the magnificent Mother Church in Boston there are two windows, in one of which is a figure of our Lord, and in the other a

representation of "a woman clothed with the sun, and the moon under her feet, and upon her head a crown of stars."—Rev. xii: 1. This woman, Christian Scientists claim, is Mrs. Eddy, and her book is the book mentioned in Revelation. Still further, around the walls of the church are quotations signed alternately, "Jesus Christ," and "Mary Eddy," who is spoken of as "Our Mother." And, yet, Mrs. Eddy deemed it necessary to cover this book by a copyright, and to make it a patented article, on the same plane with Lydia Pinkham's Vegetable Compound, or Radway's Ready Relief.

And she has been called by her devotees, "the most illustrious woman of the Continent," "The most marvellous woman of the ages, a second great Mary, who has taught the world how to know God."

But sacrilegious, aye, blasphemous as all this is, it is not with Christian science as a religion that we are most concerned, but with Christian science as a medical delusion, as a pretense to healing.

Septimus J. Hanna, editor of the *Christian Science Sentinel*, says: "Christian scientists rely upon God and divine power for their healing in every way, and every emergency rather than upon human physicians." In other words, Christian science pretends to treat every kind of human ill without resort to medical means—claims to cure cancer, consumption, diphtheria, scarlet fever, all other fevers, and all inflammatory diseases. A consistent application of this belief would apply to fractures, dislocations, bleeding arteries, and other injuries, but Mrs. Eddy says: "It is better to leave the adjustment of broken bones and dislocations to the fingers of the surgeon, until the advancing age admits the efficiency and supremacy of mind," thereby showing her cunning, for sufferers from such injuries live to bring the scientists into courts, as defendants in suits for malpractice, "but dead men tell no tales." The theory underlying this treatment is a species of pantheism in which the reasoning is something like this: God is good; good is Mind: God, mind being all, matter is nothing.

Sin, sickness and death cannot affect God, therefore they cannot affect Mind, which is God. There are two forms of mind—Divine Mind and Mortal Mind. Mortal mind is responsible for all the trouble in the world, especially for sin, sickness and death; mortal mind is also responsible for a belief in matter. "Matter is a subjective state of mortal mind evolved in belief by false, material sense." But mortal mind being a subjective state it really has no existence and disappears with the development of a firm belief in Divine mind; as mortal mind disappears, with it also goes the belief in matter or material things, and sin, sickness and death. This being the theory, how is it applied? The Christian science healer sits beside the patient, who is suffering from the delusions of mortal mind, and thinks he is sick, and endeavors to argue the false impression away; allays his fears, positively assures him that there is no disease or suffering, and endeavors to replace his false beliefs by a belief in Divine mind; this is helped by prayer and reading from Mrs. Eddy's book.

A word with reference to Osteopathy. Like Christian science, this system announces to treat all diseases without the use of medicine—like Christian science it accounts for all diseases by a fanciful pathology: Christian science teaches that all diseases are due to errors of mortal mind. Osteopathy, "that bodily disorders are the result of mechanical obstruction to the free circulation of vital fluids and forces." "What is pneumonia? It is a congestion; it is too much blood in the lungs. What is typhoid fever? It is too much blood in the small intestines. What is diphtheria? It is too much blood in the membranes of the throat. What will cure these troubles? Correct the circulation; make the circulation absolutely perfect, and these so-called diseases will at once depart."

Like Christian science, osteopathy discards the germ theory of infectious diseases, throws aside all the discoveries of bacteriology, ignores all the results of the investigations of the great army of patient, honest students the world over; and substitutes in their place simply—manipulation. Like Christian science its backs up its claims to recognition by great numbers of patients, and names of persons noted for intelligence and influence.

I will not weary you by further citations to establish the propositions made above. I think you will agree with me that their demonstrations are complete. Do the present prominent medical delusions, Christian science and osteopathy, point to their great following, and claim among their followers persons of prominence and intelligence? Let me refer to the above statements, and remind you that Francis Schlatter and Dowie can claim the same, or that further back Cagliostro and Perkins were accorded a like support. Osteopathy may claim its thousands, and Christian science its tens of thousands, but Lydia Pinkham numbers her patients at a million.

But, now I hear you ask, why is this? Why can humanity be thus befooled? There are several reasons to be offered.

First: The self-limitation of diseases. A large percentage of all the ailments affecting humanity, some say over fifty per cent., for which medical aid is sought, tend naturally to get well, and will get well under good care and proper hygienic influences, without any special medical treatment. This is self-evident to the profession, but not to the laity. With the people, sickness is a calamity that always requires some special medical means to remove, and added to this mistaken belief is a false method of reasoning, or accounting for recovery—namely that recovery is always attributed to the means used, in other words a sequence is taken for a consequence; a *post hoc* for a *propter hoc*.

Again a large number of ailments that are very serious in their character to the patients are simply functional troubles, due largely to our unnatural way of living. Consider the overtaught, underfed or improperly fed and villainously dressed children; overworked, overstimulated men; and women who violate every canon of health as to rest, recreation, food, clothing and general living; add to this the noise and confusion of town life, the daily rush and rapid way of doing everything—the constant jingle, jingle, jingle of the telephone bells and street cars, the clack, clack of horses' feet on paved streets, the clanging of church bells and the roar of steam whistles, and do you wonder that the harvest of such sowing should be unbalanced nervous systems—the so-called nervous prostration, hysteria, neuralgia, dyspepsia and melancholia?

In the management of all these ills, the personal factor of the medical adviser is a powerful one. Pettigrew says: "The bold unblushing assertion of the empiric of a never failing remedy, constantly reiterated, inspires confidence in the invalid, and not infrequently tends by its operation on the mind to assist in the eradication of the disorder." But not only in self-limited diseases and neurasthenia is the personal factor of the medical adviser of great importance. In all kinds of sickness and in every physical calamity this personality is, and ought to be, a powerful agent in affecting relief; and it behooves the educated physician to avail himself of this agent in his combat with disease.

Much is now being said of suggestion as a therapeutic agent. As defined by the Century Dictionary: "Suggestion is the insinuation of a belief, or impulse into the mind of the subject by any means or by words, or gestures, usually by emphatic declaration." A late writer says: "The presence of the physician who inspires his patient with confidence and hope is a constant suggestion that health will be restored." How often do we hear the patient say, "I was better the moment the doctor came into the room." The tactful physician says to his bed-ridden, neurasthenic patient, "I shall expect to see you sitting up to-morrow when I come." And the patient will, in all probability, be sitting up. The next day he will say, "I shall be greatly disappointed if you do not meet me down stairs to-morrow," and in all probability he will be met as he suggested. No finer example of the magical influence of the doctor's presence was ever given than that described by MacLaren, when Burnbrae's boy had his hand mangled by the threshing machine and they were waiting for Dr. MacLure to come. It was often told how far he was up Glen Urtach when the feeders of the threshing mill caught young Burnbrae, and how he had only stopped to change horses at his house and galloped all the way to Burnbrae and flung himself off his horse and amputated the arm and saved the lad's life. "You wud hae thocht that every meenut was an hour," said Jamie Soutar, who had been at the threshing, "an' a'll never forget the puir lad lying as white as death on the floor of the loft wi' his head on a sheaf, an' Burnbrae haudin' the bandage ticht an' prayin' a' the while, and the mither crying in the corner. 'Will he never come?' she cries, an' a' heard the soond o' the horse's feet on the road a mile awa' in the frosty air. 'The Lord be praised!' said Burnbrae, and a' slippit doon the ladder as the doctor came skelpin' intae the close, the foam fleein' fae his horse's mooth. It was michty tae see him come intae the yaird that day, neeburs; the verra look o' him wes victory."

But admitting as we do that a large percentage of ailments do get well without active medical interference, fifty per cent. if you will, also that a considerable number are conducted safely to health by the personal influence of the physician, by suggestion, or whatever you like; there remain still a large number of diseases in which the powers of nature and the forces of disease are engaged in a death grapple, that will result disastrously to the victim unless nature have the most prompt and most efficient aid—aid that can be given, and be given only by the educated, scientific medical man. Of the great number of such diseases time will permit me to refer to but two or three.

Dr. Nicholas Senn, at the last meeting of the American Medical Association, in a discussion of appendicitis, admitted that eighty per cent. of all such attacks get well without operation. This is a very generous admission for a surgeon, but grant it, what is to become of the other twenty per cent.? What can manipulation, or faith, or Christian science do for a perforated, suppurating gangrenous appendix? Modern surgery claims to cure ninety-eight, or even a hundred per cent. of such cases, if the operation be done early, and the claim is well founded. Grant, also, that eighty per cent. of pregnant women approaching delivery will get along safely without any special medical aid, but what of the other twenty per cent. of cases in which there is very likely to be puerperal convulsions, or hemorrhages, or malpositions, cross presentations, in which if the patients do not have the care of the best medical skill they will in all probability die; but with such skill they will almost invariably recover. And diphtheria, that most terrible enemy to child-life, that has planted the yew and cypress in every graveyard of the land; that has made more hearthstones lonesome, and more hearts sad than any other malady; that has caused lamentations and mourning throughout the world—Rachels weeping for their children and refusing to be comforted because they are not.

The efforts of the best men in the profession were as nothing—with fiend-like rapacity this modern Moloch claimed the best and dearest of our homes, and the insatiate monster still cried for more. But thanks to modern medical science, thanks to the germ theory of disease, the deliverer has come, and this fearful scourge has been

robbed of its terrors, for antitoxin cures diphtheria. Modern medicine says: "Go tell every fond mother and every devoted father that antitoxin properly administered and in time will cure diphtheria." This is my confession of faith, that the proper dose of antitoxin administered during the first twenty-four hours and repeated as necessary, gives promise to cure every case of diphtheria, and if given during the second twenty-four hours, will cure ninety per cent. of such cases; and this is the faith of my profession!

And yet Christian science and osteopathy have the brazen effrontery to assert that they treat all diseases without calling "upon the human physician," and "without the use of medicine," and by circulars and advertisements in the papers make these statements to a confiding and easily deluded public. Any man, or any set of men, who depend upon manipulation, or upon prayers in cases of appendicitis, or who undertake to conduct pregnant women through the perils of maternity by the same means, or who withhold from children the almost miraculous benefits of antitoxin in diphtheria, and who by their "bold and unblushing assertions" publicly reiterated, mislead and delude the people, are dangerous men, a peril to the community and ought to be suppressed.

But what of the future? History will but repeat itself; the royal touch for king's evil, Perkinism, Mesmerism, Thomsonianism, Schlatterism have all gone, to be remembered only as historical curiosities, and to illustrate how far humanity may be fooled. Only a few years ago our ears were filled with the adulations of Keely and his institutes, and good men with the dollars, and pious women with their prayers were doing their best to convince the world that the great deliverance to the drunkard had come. But the glory of Keely has departed, and his was another light that failed. So will it be with Dowicism, and Stillism, and Eddyism, they are little clouds, they will soon pass, and the names of Dowie, and Still, and Eddy will take their places by the side of Mesmer, and Perkins, and Thomson, and Schlatter, and Keely, who lived and flourished for a time, and then died.

But what can be done? Should anything be done to combat these false leaders of the people? Purrington says of Christian science: "Publicity will destroy this cult far more quickly than legislation." Many States of the Union have passed laws regulating the practice of medicine, but the term "practice of medicine" has been so imperfectly defined by the courts that these laws offer little, or no protection to the public. "The use of drugs, medicines or instruments" in treating the sick or injured, the definition usually given by the courts, would convict a druggist who prescribes a dose of chalk mixture for diarrhea, and would permit an osteopath or a Christian scientist to escape, who allows a child to die of diphtheria without antitoxin, or a woman in labor to die with her child undelivered. The "glorious uncertainties of the law" are well illustrated by the fact that the State of Kentucky excludes the osteopath absolutely, while the neighboring State, Ohio, can find no justification for this exclusion.

From all that has thus far developed it seems conclusive that with the present definition of the term "practice of medicine" that attempts to execute the laws now existing would simply give the pretender a little cheap martyrdom, and aid rather than deter him in his nefarious business.

It behooves all practitioners who have complied with the medical registration laws to unite in an appeal to the legislature for the passage of an act defining justly the term "practice of medicine," so as to include "all methods of treating the sick and wounded for hire," or, as stated most intelligently by Mr. John A. Opp of the Luzerne County bar, in an opinion as examiner to report upon the application for a charter by the new school of osteopathy, in this city. In this opinion which was adverse to the application, Mr. Opp says:

"We conclude, therefore, that a medical practitioner is one whose business, or profession, is to heal diseases, whether it be by drugs, medicine, electricity, hot or cold water, or massage. That the practice of medicine as used by the act of 1877, is the attempt to cure any person, sick or afflicted, by the use of medicine, or by any means or agency whatsoever; that the word 'medicine' in such statutes is used in its broadest sense and means any curative agency." Such a definition would make it necessary for all persons pretending to heal to come before the State Board of Medical Examiners and to meet the same requirements as are demanded of legal practitioners.

Medical legislation has been productive of much good—it has produced a higher standard of medical education; it has closed the diploma selling mills; it has placed the profession on a higher plane, and enabled it to command a much greater respect in this age of the world; and it has aided in making the profession more and more powerful to combat disease. Without doubt, the present medical delusions will pass, as all their predecessors have passed, but they will be succeeded by others, as the genus has always existed—false lights along the shore to mislead the unwary, to shipwreck and ruin; but the great sun of true medical science will continue to shine with greater and greater effulgence until the perfect day.

Finally, may we not indulge ourselves in the poet's rhyme:

"Swift pass the days. Our century slowly dies—
Quick beats her pulse and filmy are her eyes.
Her flowing robes are red with countless wars,
Her tender breasts are sad with many scars;
Yet in her dying eyes prophetic glows
Some sweet prediction of a world's repose.
Lo, at her side the coming sister stands,
And bends to hear, and fold those wasted hands.
What shall I bring which thou hast failed to find?
What nobler hope have I to give mankind?
Hark! From the lips where life had seemed to cease
Comes the low murmur: "Thou shalt give them Peace."

SOME STUDIES IN METABOLISM IN CHRONIC NUTRITIONAL DISEASE.[1]

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It cannot be emphasized too strongly in the practical study of the phenomena of health and disease that, as far as the limitations of our knowledge enable us to determine, vital phenomena of every sort are reducible to chemical formulæ. Look where we will, or analyze as far as we can, we will find ourselves unable to go beyond this proposition. The microscope has told us much and revealed wonders in the minute structural formation of organized bodies; but in spite of all this it leaves us absolutely in the dark as to the real nature of the processes which in some sense are equivalent to the life phenomena with the study of which we are especially concerned. It therefore becomes necessary, after pursuing our investigations as far as we can with the microscope, to lay it aside and pursue the further elucidation of the problems of life with the test-tube and balance in the chemical laboratory.

When we attempt to make a practical application of these obvious truths in the study of vital processes we are at once confronted by a painful sense of the imperfection and sharp limitations of our knowledge. We see at once that we know but little more than the alphabet of the wonderful array of complex chemical processes which go to make up the phenomena of the cellular and somatic life represented by the higher animal organism. But this alphabet is already a pretty large one, and its complete mastery and application to clinical methods will do as much if not more toward furnishing a clear and lucid comprehension of diseased processes than anything else with which I am acquainted.

As illustrative of the high value attached to investigations along these lines I desire to present a few facts gleaned from the daily grind of routine clinical work.

In looking for a convenient accessible and faithful reflex of the chemical processes going on within the body which we designate by the blanket term "metabolism," the urine presents itself as *par excellence* the material best suited for our purpose. The obviousness of this proposition makes comment unnecessary further than to point out the fact that practically everything existing in the urine is preformed in the blood; has served its purpose in the economy, and is carried away by the currents of renal secretion as effete material. The kidneys are not in any proper sense of the word secretory organs, as they are entirely destitute, as far as we know, of proper secreting glands, their exclusive function being to act as separators, to speak, of certain materials held in solution in the blood which it is to the advantage of the economy to throw away. The theory that uric acid and certain other urinary constituents are formed in the kidneys has been entirely disposed of by the investigations of Minkowski and others, and we are fully justified from a practical point of view in regarding every molecule which is found in the urine as identical with one which preexisted in the blood, at the same time admitting certain unimportant modifications produced by the renal epithelium, such as the synthesis of hippuric acid, from benzoic acid and glycocol in Munk's experiment.

In singling out the urine for the purpose of clinical study in the manner indicated, it is not my intention to underestimate the importance of pulmonary, cutaneous, or intestinal excretion. The technical difficulties, however, in the way of the chemical investigation of these latter excretory products, together with the fact that the chemical combinations found in the intestines are mostly of local origin, make them unavailable as standards for clinical study.

Turning to the urine and seeking for evidences as to the state of general metabolism, the greatest interest centers in the end-products of nitrogenous waste. Of this, urea is by far the most important; next in order comes uric acid, and after this the xanthin bases. The adequacy of the chemical processes of the body in the genesis of the life forces is indicated by the total quantity of urea per unit of body weight better than by any other, if not all other, facts combined.

In the study of chronic nutritional disease of various sorts, they can be divided, it appears to me, to advantage in three groups; one with diminished urea excretion; another with excessive, and a third with normal, or, as I think they might be conveniently designated, hypoazoturia, hyperazoturia, and orthoazoturia.

As an illustration of the first group I have recently selected from my notes forty cases of neurasthenia with marked hypoazoturia, the average of the entire forty cases being less than 10 grams, or about 155 grains per day. The lowest quantity found was 2 grams in one case and 3.25 in another; ten cases had 5 to 6 grams and the remainder ranged from 6 to 19. In such cases important therapeutic indications are obvious and, with perhaps the single exception of renal insufficiency from organic disease, forced feeding is indicated, in many cases, with hydrotherapeutic or other mechanical measures, and outdoor life, to stimulate as actively as possible the various functional and nutritional processes.

In the second class of cases (hyperazoturia) we find numerous chronic morbid states among which diabetes mellitus occupies a conspicuous position, in which tissue metabolism is excessive and the output of urea greatly in excess of what it ought to be. For instance, in a recent case of diabetes in a young girl weighing 95 pounds, the quantity of urea was 48 grams, or about one and one-half ounces, for an adult weighing 150 pounds. It is not, of course, always possible for

[1] Read before the Indiana State Medical Society, May 24, 1900.

us to meet the therapeutic indications arising from such a condition, but the salient fact of excessive metabolism is an important one and should be taken into close account in dealing with this group of cases.

In the third, small group of cases (or those of orthoazoturia) we find the urea excretion strictly within the normal range, and yet have to deal with obvious chronic morbid nutritional states. Where a proper balance is maintained in the intake and output of nitrogenous material and yet severe nutritional disturbance presents itself, we will commonly have to deal with toxic conditions resulting from functional disturbances of some one or more of the principal organs of the body. This may not be true in the first and second groups. In studying the urea excretion, care should be taken not to lay too much emphasis on the results of a single analysis, as the amount is subject to tremendous fluctuations from various causes, transient and even unimportant in their bearing on the pathology of any given case. A series of analyses of measured twenty-four-hour collections is advisable in all cases were unusual conditions are met with.

Taking up the question of uric acid as the next most important product of nitrogenous waste, we find it subject to wide fluctuations from many different causes, some of which are reasonably plain and others entirely obscure. It seems to be pretty fully agreed that uric acid is derived from the nuclein substances of the organism; and that the latest investigations of Horbaczewski indicate if they do not prove that it is derived directly from these substances and not from the xanthin bases as intermediate oxidation products. The chemical formulæ of uric acid and the different xanthin bodies placed side by side with their gradually descending molecules of oxygen, furnish a very picturesque argument in favor of each of these bodies being derived from the next lowest oxidation product. This theory appears to be quite untenable.

With reference to the prevailing view that uric acid is derived principally from the nuclein of the white blood-cells, I have to oppose some clinical observations which I cannot explain in accordance with this theory. For instance, in one case of splenic myelogenous leukemia, my study of which has extended over a long period, the quantity of uric acid in 24 hours has fluctuated widely, being as low as 1 gram and as high as 2 1/3 grams (15½ to 36 grains); the leucocytosis in this case has varied from as low as 10,000 up to 277,000 per cmm., the leucocytes being thus at one time 27 times as numerous as at another. I have been unable at any time to trace a correspondence between the number of the leucocytes and the amount of uric acid excreted. For instance, at one time with the leucocytes at 10,000 there was 1.1 grams of uric acid while at another with the white-cell count up to 277,000 the uric acid was 1.6 grams; with another white-cell count of 11,000 the quantity of uric acid was still above one gram, and yet again with a count of 20,000 there was 2.7 grams of uric acid. Obviously there was no connection in this case between the number of leucocytes and the quantity of uric acid excreted. In another case of fatal heart disease, under the care of Dr. Campbell of Ada, O., there was a very marked leucopenia, the white cells being found only to the number of 1300 per cmm.; and yet two different estimations of uric acid showed respectively 1.59 grams and one gram, both amounts being considerably above what is regarded as the physiological standard. If time permitted I could quote numerous cases along these lines, showing an utter lack of correspondence between an increase and decrease of leucocytes and uric acid.

What was said with reference to the relation of the xanthin bases to uric acid is probably also true with reference to the relation of uric acid to urea. The most we can say in the present state of our knowledge is that variations in the amount of uric acid simply indicate perturbation of normal metabolic processes which always have a more or less important bearing upon chronic nutritional disorders. The largest quantity of uric acid that I have ever found and, so far as I know, larger than has been found in any recorded case, was in the case of diabetes already referred to, in which the Hopkins method showed 90 grains in twenty-four hours. Three different titrations were made, each one giving approximately the same result.

I use a modification of the Hopkins method in my laboratory, the correctness of which I have verified many times by making percentage solutions of uric acid and making control titrations with them. With reference to uric acid in diabetes, I notice that Startz of Germany is said to have pointed out some sources of error, the exact nature of which I do not know as I have not yet had an opportunity of consulting the original monograph.

There are many other important indications to be found in the urine bearing on the processes of general metabolism. I might mention in this connection the occurrence of leucin and tyrosin as indicating a perversion of nitrogenous metabolism commonly associated with acute atrophy of the liver, but also found in numerous and varied chronic nutritional disorders, among which I may mention, as having occurred under my own observation, Brights' disease, leukemia and chronic hepatic congestion and chronic gastro-enteritis. The occurrence of these bodies is not pathognomonic of any particular disease, but simply indicates changes in the chemical processes of the tissues, the precise meaning and character of which are still obscure.

Variations in the quantity of the various inorganic salts present problems of great interest which I cannot now consider. In this connection the sulphates are perhaps of the least importance, variations in their amount being principally due to dietetic influences. There is good reason for believing, however, that this is not true with reference to the phosphates and chlo-

rides, variations in the quantity of which have more or less direct significance with reference to the metabolic processes of the organism.

It has been my intention simply to point out a few interesting facts which have fallen under my own observation and indicate what appears to me to be their bearing upon the practical problems of clinical medicine. In this direction there lies one of the most fertile fields for original clinical observation, the cultivation of which will broaden our views of disease processes and furnish us many an important hint in the management of obscure pathological conditions with which we have heretofore dealt under great difficulties.

THE ART OF KEEPING COOL. WITH SPECIAL REFERENCE TO THE PROPER USE OF WATER.

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The object of this communication is to show, as briefly as may be, how, by the judicious use of water both internally and externally, we can keep ourselves comparatively comfortable during the warm weather and can avoid suffering to a considerable extent from the ill effects produced by a prolonged season of summer heat.

A great many persons either do not know how to properly use or have a prejudice against the use of cold water, and to such it behooves us to show the advantages, and to point out a few practical results which may be obtained by the correct use of water which will tend to add greatly to their physical comfort.

Internal Use of Water.—Cold water taken in moderate quantities and at frequent intervals during the day not only acts as a flush to the stomach and intestines, but tends to improve the appetite, increase peristalsis and relieve constipation. It also stimulates the liver, heart, kidneys and skin to a healthy action. Its effects on the kidneys are not only to increase the watery, but also the solid constituents of the urine. As tissue metamorphosis is greatly enhanced by water, the organism will be much rejuvenated by its moderate and systematic use. By introducing water in small and frequent quantities, either into the stomach or rectum, we can obtain a reduction in the bodily temperature, which is due not only to the direct effects of the cooling properties of the water, but to reflex action. It also has a tendency to lower the temperature of the body directly by means of stimulating the function of the sweat glands.

The skin is not only an organ of sensation, but it has also the function of (*a*) secreting the sweat, (*b*) a respiratory function, and (*c*) an excretory function. The amount of insensible transpiration given off from the skin has been estimated to be on the average about 900 grams per day. The amount of sensible perspiration, or sweat, varies very greatly in amount in accordance with the height of the temperature, the amount of muscular exercise, the quantities of fluids imbibed, and other factors. The skin has a distinctly respiratory property. It has been estimated by Aubert that the amount of carbonic acid given off by the skin in the course of twenty-four hours amounts to 198 cc. while the body is in a state of repose. The skin, in addition to excreting carbonic acid and sweat, also excretes, by means of the sweat, an organic substance similar to albumin, of which there are however but traces, and a free volatile acid which gives to the sweat its acid reaction and odor.

In this place it may be of interest to recall the composition of the sweat, which is as follows:

Water	995.50
Sodium chloride	2.23
Potassium chloride	0.24
Sodium and potassium sulphates	0.01
Salts of organic acids	2.02
	1000.00

It follows from the above considerations that the normal functionating of the skin is essential to good health and to a personal sense of well-being. The proper action of the skin may be impaired by ill-health, various diseases of the skin, nervous disorders, etc.

It may be of interest to note here that in some person the sweat, either owing to the nature of the free volatile acid or organic matter, or both, has a very disagreeable and even offensive odor. In addition to keeping the skin in a proper cleanly condition by means of frequent ablutions, the use of some alkaline mineral water, or for convenience, one or two three-grain effervescent tablets of citrate of lithia, will be found of service. The tablets should be taken three times a day in a glass of water. Ice water should be prohibited. The water, if desired, can be sufficiently cooled, by being placed in bottles in a refrigerator.

External Use of Water.—Some of the most important and beneficial effects of water are obtained from its external use. Not only does it have a cleansing, antiseptic and stimulating action on the skin, but also a stimulating effect on the circulatory, respiratory and nervous systems. Tissue metamorphosis is also stimulated by the external use of water, as well as by its internal use. Water at the same time has the property of absorbing heat, and when applied to the surface of the body will abstract heat therefrom, the amount of heat thus abstracted varying according to the temperature of the water and to the length of the application. The effect of the application of cold water to the skin for a short time causes increased blood-pressure, strengthens the heart's action, stimulates the pulmonary circulation, and causes a tonic contraction of the capillaries. All these effects tend to hasten the blood-flow, and as it circulates more rapidly in the skin than usual, it tends to give off heat more

readily. These effects are still further enhanced by the mechanical action of water on the skin when directed from a height or from a distance. The value of the mechanical effects of water have been fully recognized, especially in the last few years, and the use of water under pressure in public baths in many State institutions, and even in small private hospitals, is an evidence of the high therapeutic estimation in which it is held.

Bathing in Warm Weather.—Having considered in general terms the effects produced by cold water when applied to the skin for a short time, let us see what benefit and comfort can be derived from the use of cold water or of warm water, followed by the use of cold water. On rising from bed in warm, and especially in sultry weather, one feels as a rule a sense of lassitude, and in general there is a lack of nervous tone. The skin is relaxed and may feel moist and clammy. A lack of refreshment is felt, although sleep may have been sound, and an indisposition to take up the business cares of the day. This is the time for the cold bath. The bather should immediately on rising take a dip in water at a temperature ranging from 60° to 70° F., the bath lasting from one-half to one minute and to be followed by a vigorous rub with a coarse bath-towel. It is still better, in order to obtain the mechanical effects of the water, to have a couple of pails of water at the above temperature dashed over the bather from a distance. If one has a shower bath it is equally good. If the bather is not accustomed to such baths, or is not very robust, he should begin by taking the baths at a little higher temperature, and then gradually accustom himself to the temperature of 60° F. If the friction with the towel can be done by another person, so much the better.

The result of taking such a bath as this is very manifest. It is a powerful stimulant to the heart and nervous system and inaugurates a sense of well-being which had not existed before the bath. The skin takes on a healthy glow, the appetite is improved, and, in short, the whole organism is rejuvenated, and the individual is enabled to undertake his day's work with energy, and to resist much better the depressing effects of the warm and sultry season of the year.

At the close of a hot day in summer there is nearly always a feeling of more or less nervous exhaustion, and on retiring, owing to the heat and fatigue, sleep is delayed, and frequently when it does come is fitful and restless in character. At such a time the bath is a great boon. The bath proves more efficacious, I believe, when taken at a temperature of from 103° to 105° F., lasting for from three to seven minutes. The warm water not only cleanses the skin, but is mildly stimulating and causes only a moderate congestion. At the end of from three to seven minutes cold water at the temperature and as before mentioned should be used. A marked reaction ensues, together with its accompanying stimulating effects, and after a brisk rub the bather can go to rest and in the large majority of cases enjoy a good night's sleep, although the temperature is very high.

For women and children it may be preferable to begin the use of the baths with a less marked difference between the temperature of the warm and cold bath. Thus, a bath at 103° F. followed by a rain or shower-bath at 85° F. might be given. What is steadily aimed at is the securing of a good reaction with its attending beneficial results. After a time the difference between the temperatures of the water can be gradually increased with good effect. It may be desirable, also to rub the body gently with the hands, in order to still further stimulate the flow of blood through the skin.

The use of the baths as described should be made a matter of habit, in order that they may be taken regularly and systematically, thus securing the good results indicated. The improvement in the general health and the ability of the organism to better withstand the exhausting effects of warm weather will soon be manifest. In case, however, of the existence of disease of the skin, or of some serious affection of the heart or lungs, the physician would, of course, give such special directions as might be required.

It is only necessary to touch upon the fact here that a large proportion of the inhabitants of our large cities can seldom indulge in the luxury of a bath. In many of the European cities public baths are provided for the people; and in this country a few cities have adopted them. But it is only within the last few years that a cleanly system of public baths has been provided for the poor in New York City. So far these baths are very inadequate to meet the demand, and it is hoped that a sufficient number of bathing places will be placed in the thickly populated districts of New York in order to meet the public requirements as well as to fulfil the needs of public health and cleanliness.

As supplemental to the beneficial effects of the uses of water, the importance of paying close attention to the digestion and regulation of the bowels should not be overlooked. The diet should be moderate in quantity, plain and non-stimulating, consisting largely of fruits and fresh vegetables. Abstinence from alcoholic beverages, especially during the summer months, should be strongly insisted on. Alcohol tends to lower the vital powers and has a depressing effect on the brain and nervous system, rendering the individual much less capable of resisting the ill-effects of hot weather, especially the condition known as heat prostration, or sunstroke.

The clothing should be light and loose. The underclothes may be light woolen, or cotton and wool, the principal point being that the garment should be porous in texture.

Avoidance of drafts is recommended, although it may be said in this connection that the tendency to "catch cold" or to get a "stiff neck" when unavoidably exposed to a draft will be much diminished, if the methods of bathing

herein suggested are faithfully carried out. The skin will have become toughened, as it were, by the use of cold water, and less sensitive to drafts and sudden atmospheric changes.

THE DOSE OF POTASSIUM IODIDE. WITH REFERENCE TO ITS UNTOWARD EFFECTS UPON THE UPPER RESPIRATORY TRACT.

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There are four groups of affections of the upper respiratory tract in which potassium iodide, to a greater or less extent, is indicated either to relieve symptoms, to restore the integrity of the parts, or as an aid in diagnosis.

The first group embraces the new formative and destructive lesions of syphilis: that is, the phenomena so frequently observed of tertiary syphilis of this region. The second in point of frequency consists of non-specific changes of the mucosa, characterized by deficient secretion and an abnormal degree of dryness, the drug being used to increase glandular secretion and thereby relieve the nasal or pharyngeal distress. The third group, in which it is used more or less frequently as an aid to diagnosis, is one requiring careful study in the individual case and is sometimes of great value in the diagnosis of new formations of the pharynx and larynx from obscure syphilitic growths, or to differentiate in conjunction with other measures a carcinoma, for instance, from a gumma of the tonsil. In some of these cases the utmost difficulty may be encountered in accurately recognizing the condition present and the well-known effect of this drug in certain syphilitic states, the disappearance of a gumma following its administration and the opposite in malignant growths indicate its use for this purpose. This latter statement needs qualification to a certain extent, however, for in malignant growths and even tuberculous tumors of this region favorable symptoms are sometimes seen for a few weeks after the potassium iodide has been used. A short period of observation, bearing this in mind, however, will enable one to see into the nature of the affection and the influence exerted on it. Finally, the drug is of value in certain specific granulomata, as actinomycosis, which on account of their rarity require no further mention.

It is not desired to especially indicate the use of potassium iodide in the affections enumerated, but to call attention to the phenomena of iodism of this region and the peculiar susceptibility in some cases and tolerance in others to minute and massive doses. "A curious phenomenon is the production of iodism from small doses and, in contrast, the comparative immunity which attends the administration of large quantities."[1] The following cases show this in a marked manner, the first being one of unusual susceptibility.

Mrs. L., aged twenty-two years. She was seen September 22, 1894, complaining of excessive mucous discharge from the nasopharynx and frontal headache, following typhoid fever (?) three years previous. The nasal arch was flattened and from certain objective symptoms and her mode of living, tertiary syphilis was strongly suspected, although no direct history of infection could be obtained. She was placed on ten grains of potassium iodide, three times daily, and within twenty-four hours all her mucous membranes were secreting in excessive amounts, the upper respiratory tract and the mucosa of the eye and ear were inflamed, as was also that of the intestinal tract, vomiting and diarrhea being constant. There was headache, but not any dermal eruption and the symptoms of which she previously complained were intensified. These symptoms attained their maximum in twenty-four hours after the first dose, which was the only one taken, and continued in a violent form for three days, gradually declining and entirely disappearing in three weeks. Two weeks after complete recovery from the attack produced by ten grains she was given, without her knowledge, one grain of the drug and all the symptoms noted made their appearance within a few hours and continued for three days. One grain of potassium iodide in this woman, therefore, produced exaggerated symptoms of iodism.

The case by contrast which was seen in December, 1899, was that of J. S., male, aged forty years, who had been advised by a friend to take potassium iodide for an attack of rheumatism. There were no indications of syphilis and he denied any history of such. He had the drug put in powders each containing 240 grains; one of which he took in a glass of beer after each meal. When I first saw him on December 27th he had taken the drug for three days in the dose mentioned—a total of 2160 grains—and had practically no symptoms. There was some nasal congestion and a subacute conjunctivitis, but nothing more at the time and nothing further developed.

In a somewhat extended search of the literature I am unable to find a duplicate of the second case, especially bearing on the massive dose taken in such a short time with practically no symptoms, but numerous cases have been reported in which, commencing with a moderate dose, the patient has ultimately attained large amounts without symptoms of iodism. Cases similar to the former, however, are comparatively frequent when somewhat larger amounts of the drug were administered, such cases having been reported by Bringier,[2] F. P. Brunthaver,[3] Montgomery,[4] and others.

The question then naturally arises as to the value of potassium iodide used to determine, in relation to its reaction, the presence or absence of specific infection. It can no longer be considered that the tolerance to large doses indicates the presence of syphilis, as the cases in which it may be used and in which syphilis can be eliminated are of frequent occurrence, too frequent

to prove by being exceptions the older idea in this respect. Peculiar, however, is the fact that in a number of individuals, both with and without tertiary syphilis of the upper respiratory tract, minute doses are ofttimes followed by iodism, while in some if the drug is pushed these untoward signs will subside and not again appear. In another class large initial doses will be of value and no iodism will take place. I have observed cases of tertiary lesions, in which the nasal interior was destroyed, including the vomer and portions of the palate bones, in which five grains of the drug would produce iodic symptoms of sufficient intensity to compel its discontinuance, although after these untoward symptoms had disappeared thirty to fifty grains were given at a dose, with the most favorable results and with the entire absence of iodic phenomena.

The size of the dose, therefore, should be measured by the effect produced on the disease or symptoms for which it is given, usually moderate doses of from five to ten grains three times daily are sufficient, and while improvement for a time will be observed in certain cases the good results will only become apparent when the amount administered is increased. On account of this peculiar relation to the drug, the dose makes little or no difference in its effect as regards iodism and in some instances, should congestion of the upper respiratory tract be developed after the administration of small initial doses, the symptoms will disappear if the drug be vigorously pushed. In this connection the statement of Bryson[5] is of value. He says that from his observations the size of the dose bears no relation to the frequency of the toxic effects. The most dangerous case of iodism seen in his practice followed quickly upon a three-grain dose. Taylor[6] states that in many cases of syphilis small initial doses have produced mischief, while succeeding larger ones have been acceptable, and also that in healthy subjects an intolerance of to-day may be replaced by a condition of assimilation a month, a year, or several years hence.

Another aspect of iodism is seen after long continuance of the drug; in this instance there is apparently no unusual susceptibility to its untoward effects, but the symptoms appear to be due to the dosage having been increased beyond what we may call the maximum iodine point of the patient. In these cases the relief of the coryza, etc., is but a simple matter, as by diminishing the dose and ascertaining the maximum amount the patient can stand the symptoms promptly disappear, not to return, provided the dosage be kept within the safety limit.

An almost cumulative effect is occasionally observed in the production of disagreeable or even serious symptoms relative to the upper air tract after the drug has been completely withdrawn for some time. In such instances no untoward symptoms having been present, yet they appear several days or weeks later, while in a somewhat larger class the drug has been withheld on account of mild iodism and within a short time severe symptoms develop, these latter symptoms often exceeding in intensity the former. This is especially pertinent to adults, as iodism is of exceptional occurrence in children, the younger the individual, the less being the liability to this accident.[7] The drug, in adults, seemingly has a specific action on the mucous membrane of the upper air paths, a single dose frequently producing a transient coryza and congestion of the palate and pharynx.

The tendency of potassium iodide to produce untoward symptoms of the respiratory tract is shown by the frequency of laryngitis and a low grade of edema in a considerable number of patients to whom the drug is administered. The severe form of glottic edema occurs without apparent reason, the general condition of the patient having little or no influence in its production, for it occurs in both the weak and robust without selection. Usually edema is not observed following large doses or after long medication, but it sometimes takes place after small doses and is the only symptom, none of the usual phenomena of iodism being present at the same time. The edema may be so extensive as to call for tracheotomy or suden death may even result. It may develop quite rapidly and may as suddenly disappear. Groenouw[8] reports a case that developed following a dose of only three grains of the drug and remarks that it may occur during the early administration of the drug; it being apparent that the longer the salt is used, the less is the danger of edema. An interesting case is reported by Heymann[9] in which edema developed in a syphilitic several days after the potassium iodide had been stopped; eight days later it disappeared.

The production of iodism in one individual and not in another, under apparently the same conditions and especially with small doses, has most frequently been explained by using the term idiosyncrasy. That certain individuals possess irregular reactions to some drugs is too well known to require any emphasis and in respect to the drug under consideration several theories have been advanced; that it is due to impurities, the most frequent being iodate of potassium; another that it is produced by defective renal elimination; while that of Capitain[10] is that iodism is due to the elimination of iodine by the various mucosa of the body. This phase has been studied by Ehlers[11] who found that the amount of potassium iodide eliminated by the urine was increased in proportion to the dose administered, iodism being caused by its retention in the body and occurring when only half the amount given had been eliminated. In cases in which doses of twenty grains are administered, it is eliminated in the proportion of seventy-five per cent.; there is no danger provided the excretive power is to some extent normal. While this explains the production of untoward symptoms from the ingestion of medium or large doses, it fails when applied to those cases in

which the symptoms are the result of minute doses.

I cannot agree with the theory of Rohmann and Malachowski,[12] *i. e.,* that in order that iodism can arise it is essential that nitrites must circulate in the blood and that the reaction of the mucous membranes must not be alkaline. A recent explanation, and to some extent plausible in the trend of the present study of internal secretion is that of Von Cyon[13] who, in studying the peculiarity expressed by the production of iodism following small doses, found that the iodine salts circulating in the blood were changed into iodothyrin through the influence of the thyroid gland and this substance produced a reaction. If on the contrary the iodides are administered in large doses, they act as diuretics and are promptly eliminated by the kidneys in the form of soluble salts.

Owing to the extensive use of iodide of potassium in all branches of medicine, a few words directed to the means of avoiding unpleasant phenomena may not be inappropriate. When the drug is administered in ascending doses for long periods, it is to a certain extent possible to prevent these phenomena by the conjoint administration of other drugs, such as arsenic and belladonna. While without these, symptoms of iodism may sometimes be prevented or the intensity diminished by varying the salt used, these results are enhanced if the alimentary canal is looked after and the patient is instructed with regard to the use of food and alcohol. The chances of unfavorable symptoms are decreased by dilution with water or milk. If it is taken in large amounts with little fluid it is retained much longer in the body than otherwise, whereas if liquids in copious amounts are freely exhibited, elimination is facilitated and at the same time favorable results are obtained.

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CLINICAL MEMORANDUM.

A RARE CASE OF INJURY TO THE MEMBRANA TYMPANI.

By THOMAS D. TUTTLE, M.D.,
OF HELENA, MONTANA.

The following case is of interest on account of the rapidity of such injuries and the little trouble which resulted from so grave an accident.

Miss N. F., aged sixteen years, was referred to me by Dr. Dean with the following history: The patient, who had gone to bed with her hair "done up" with hairpins, on turning over suddenly in the night was awakened by a severe, sharp pain in the left ear and on placing her hand to her ear found a hairpin protruding from the canal. Her sister, who removed the pin, said that it was quite difficult to pull it out. Its removal was followed by some bleeding and the patient immediately fainted. It was also said that the patient's mouth was drawn to the right side. The pin had entered open end first, not the round end which is so commonly used by women to "explore" the auditory canal.

Although I questioned the patient's family, as as well as her physician, I could get no evidence of any hysterical tendency, nor did I notice any while she was under my care, but I am totally at a loss to understand how a hairpin could follow the course this one did without a hand to guide it.

On examination I found a punctured wound in the antero-inferior wall of the canal about half an inch from the membrana tympani, the course of which could be followed by a distinct red line almost to the membrane, although it grew less distinct as it approached the membrane. Slightly above the center of the tympanic membrane there was a small, round opening from which bloody serum escaped. The membrane appeared almost black and bulged slightly, so I concluded that the cavity was filled with blood. There was tenderness about the tragus and on moving the auricle. The use of the speculum caused severe pain. Hearing was reduced to the watch tick at two inches. The mouth was not drawn to either side.

On account of the probable septic condition of the instrument causing the injury, I fully expected that infection would result and a generally bad condition develop. I treated the case on antiseptic principles and at the end of eight days there was not any evidence of injury except a slight congestion of the membrana tympani about the point of puncture (which had healed), the membrane presenting a normal appearance with all the landmarks showing distinctly. The tick of a watch could be heard at seven feet.

MEDICAL PROGRESS.

Treatment of Urethral Strictures.—R. Harrison (*Lancet*, August 11, 1900) claims that in operations on the urethra, too often the fact is overlooked that this canal conveys for several inches at varying intervals a compound and complex fluid, which under certain conditions, not clearly defined, is capable of exercising a highly poisonous effect on the tissues and fluids of the body with which it may come in contact; thus we have rigors and fever, suppression of urine, and even septicemia. Operations on the strictured urethra produce results similar to accidental inju-

ries of a normal urethra; thus we have a lacerated or contused wound of the urethra when divulsion as practised in Perreve's or Holt's operation is employed; here the break in the tissues is at its weakest point, and the mucous membrane is torn and lacerated as in any traumatism; hence we are apt to have a recurrent stricture of persistent form; whereas in periurethral or submucous strictures, the dense bands are ruptured without necessary injury to the mucous membrane; hence a permanent cure may result. We produce an incised wound within the urethra in doing an internal urethrotomy; if the operation be carefully and properly done so that the entire thickness of the stricture can be included within the incision of moderate dimensions, a permanent cure may be effected, without being necessarily dependent on the subsequent continued use of sounds, although the practice of using sounds at intervals after the operation is advisable as a precautionary measure. The tendency to relapse is greatest where the internal urethrotomy has caused a ragged laceration rather than a complete incision of the strictured tissues; multiple strictures or strictures of the deep urethra treated by internal incision have a tendency to recur. We produce an incised wound of the urethra from without when external urethrotomy is performed; here, too, the permanent good results depend largely upon our technic; the operation should never be performed without a guide. Repair is necessarily slow owing to bathing of the wound with urine and the excessive exudation about the seat of the wound; the tendency to re-contraction and recurrence of all strictures after urethrotomy is diminished by the concurrent employment of systematic and efficient urine and wound drainage, such as the combination of external urethrotomy or perineal incision affords.

Poisonous Snake-Bites.—A description of the various poisonous snakes, together with a detailed consideration of their poison apparatus is interestingly given in the *Medical Record* (September 15, 1900) by G. Langmann. The effect of the snake-bite, the symptoms produced and a review of the many methods of treatment that have been used, make the article a very valuable one. The object of treatment is fourfold, to prevent absorption of the poison, to destroy or neutralize it, to accelerate its elimination and to treat symptoms of imminent danger. If the limb affected, as a finger, is not immediately amputated an Esmarch or other bandage should at once be used and the circulation relieved only to prevent gangrene. Scarification or better, either excision or destruction of the area by cautery is advised. Locally supposed specifics have been much used, as carbolic acid or permanganate of potash A solution of hypochlorite of lime, 1/60, has been found very effective by Calmette and is probably the best local remedy. Ammonia and strychnine act, doubtless, merely as general stimulants, but they are certainly of value. The poison exerts both a hemolytic action on the blood and a destructive influence on the cells of the medulla. To neutralize these actions a specific antitoxin must be obtained. Calmette and Fraser have offered to the world an antivenomous serum which experimentally has been shown to have the power of neutralizing lethal doses of the poison injected into animals, and has been used on man successfully in several cases. The antivenene is made by inoculating horses with a mixture of poisons from several species of deadly snakes after the hemolytic agent of the poison has been eliminated by heating to 80° C. It acts as a full protective in a dose of from 5 to 20 cc. when injected even one and one-half hours after the introduction of the venom. The action of the antivenene is supposed to be entirely chemical for a certain amount counteracts a miminal lethal dose when injected at separate points, but 1/1000 of this quantity is effective when mixed with the venom and injected. Phisalix of Paris has recently discovered that in the blood of some animals, as the eels, there is a substance which exerts a decided antitoxin action. Cholesterin, separated from biliary calculi and carrots, has a similar effect. The most commendable treatment is: Ligature of the part, scarification and injection of the antivenene, or, if not at hand, the solution of hypochlorite of lime; stimulation, artificial respiration for hours, if necessary; lavage of the stomach to remove the poison which is there secreted, and encouragement of the victim, for a deep mental prostration accompanies the depression of the nervous centers.

Treatment of Infantile Eczema.—In the squamous or the milder grades of papular or vesicular eczema of children, L. Leistikow (*Monatshft. f. prak. Dermatolog.*, September 1, 1900) recommends the use of a zinc-oxide paste containing one to two per cent. of yellow oxide of mercury. In eczema rubrum or crustosum nothing seems to act so well as a plaster mull with zinc oxide and ichthyol. It is only in the most obstinate cases that this treatment fails when resort must be had to pyrogallic acid, which never disappoints. It is best applied incorporated in casein ointment and, if not used stronger than two per cent., no ill effects will ensue.

Optic Neuritis in Chlorosis.—Optic neuritis is occasionally seen in chlorosis, but cases are rare in which it dominates the clinical picture to such an extent as to lead to a wrong diagnosis. The patient in the case reported by A. Engelhardt (*Münch. med. Woch.*, September 4, 1900) had but a moderate diminution of hemoglobin and red cells. There was, however, complete blindness, with headache, anesthesia, paralysis and other nervous symptoms to such an extent that the diagnosis of brain tumor seemed without question, especially when later in the disease localizing symptoms in the form of epileptic convulsions appeared. The autopsy revealed nothing but extreme dryness and anemia of the brain tissues, and left only anemia to explain the symptoms.

THERAPEUTIC HINTS.

Sciatica.—According to Weir Mitchell (*Clinical Lessons on Nervous Diseases*) sciatica pain tends to be worse at night, therefore the treatment should especially cover this period. Certain sciatic cases are eased by exertion, but a true sciatic neuritis is usually very painful on walking or when the nerve is stretched by sitting, or going up stairs. The treatment followed is rest in bed, constant and prolonged, until recovery is assured, and dry cupping. About three dozen cups are applied in a double or triple row around and over the sciatic notch and down the leg. They are left on for half an hour and may be repeated the next day and two days later. In lieu of this, a mustard plaster, three inches wide from notch to knee or to ankle, may suffice. With chronics of long standing, cocaine injections, ¼ to ½ grain, may be needed at first. A splint to prevent motion at hip and knee, and a firm flannel bandage from foot to groin are applied and changed twice a day. In some intractable cases ice-bags may be added. Later, as the pain fades, the joints are mildly and passively exercised and the leg gently massaged once a day. After about three weeks the splint is left off in the daytime, but the bandage continued. Meanwhile the general condition is improved by cod-liver oil, iron at need, good diet and care of the bowels; effort at stool should be prevented by hot enemas. Persistent painful points are treated by the Paquelin cautery or a small blister. When the patient first gets up, motion and the pressure of the hard edge of a chair or wooden stool are likely to bring back pain, hence he must not sit at all the first week, but must stand or walk with the aid of crutches or else lie in bed.

Angina Pectoris.—Wm. Osler (*Angina Pectoris and Allied States*) discusses the treatment under four headings. (1) General management; treat syphilis, gout, diabetes, or valvular lesions; emphasize the importance of the three great factors in causing attacks, *viz.*, mental worry, exercise, and diet; warn against sudden movements which throw a strain upon the heart, and encourage steady, quiet exercise. For diet, have meals light, limit amount taken and exclude rich, highly seasoned, or easily fermentable food. Above all things avoid flatulency. This may be relieved by hot grog in elderly people, peppermint, spirits of camphor, Hoffmann's anodyne, carbolic acid, iodine, or creosote. Hot water before meals, a few doses of blue mass, an occasional saline purge, and the use at times of a bitter tonic keep this condition in check. Intestinal disinfectants, such as salol, betanaphtol, or grains 1/60 to 1/30 of corrosive sublimate may be helpful. (2) General medicinal treatment; genuine angina in a man under thirty five years demands vigorous antisyphilitic treatment. In gouty cases free elimination by bowels, skin, and kidneys, proper diet, and at intervals a course of colchicum, are desirable. The routine treatment consists of iodide of potassium, 10 to 15 grains three times a day, for from two to four years. This is contraindicated in advanced arterial degeneration, dilated heart, and interstitial nephritis. In hypertension give tablets of nitroglycerin, 1/100 grain, increased slowly to four or five at a dose, or sodium nitrite, 5 to 10 grains; in feeble heart with anemia, give iron, arsenic, and strychnine. (3) Treatment of the attack; nitrite of amyl, two to five minims, gives prompt relief in some cases, but is singularly uncertain. Morphine hypodermically, in quarter-grain dose, repeated if necessary, is the most useful drug. It relieves the distress and steadies and improves the heart's action. While waiting for these drugs to take effect, chloroform may be dropped upon a handkerchief and inhaled. (4) Treatment of the complications; for syncope, aromatic spirits of ammonia, Hoffmann's anodyne and brandy by mouth, and hypodermics of camphor or ether; for the cardiac dilatation and weakness, nitroglycerin with strong friction of the limbs to increase the peripheral circulation, and digitalis or digitalin, caffeine, and camphor for the heart's action. If these measures are futile, puncture of the heart may arouse to quite vigorous action a dilated and paretic organ. For the dyspnea and Cheyne-Stokes breathing strychnine, 1/40 to 1/20 grain, hypodermically, three or four times a day, and blisters to the precordium and to the bases of the lungs, may give relief.

Hyperidrosis.—The *Journal de Médecine de Paris* gives the following formula for use by persons afflicted with hands and feet that perspire too freely:

℞	Borax	15.0
	Acid. Salicyl.	15.0
	Acid Boric	4.0
	Glycerin	60.0
	Alcohol (dil.)	60.0

M. Sig., apply with friction three or four times daily.

For Ringworm.—The *Journal de Médecine de Bordeaux*, July 29, 1900, gives the following formula of which the active ingredient, epicarin, a condensation product of betanaphtol and cresylic acid, is recommended by Kaposi:

℞	Epicarin	5i
	Talci Veneti	5i
	Amyli	5i
	Vaselini	5iii.

M. Ft. unguentum. Sig., external use.

Phlebotomy for Varicose Ulcer.—*Bachmard* (Ilfeld), after noting marked improvement in such ulcers subsequent to hemorrhage near the same, tried the effect of blood-letting in thirteen cases and found that cicatrization was greatly hastened thereby. In two cases the vein selected was opened directly at the site of the lesion; in the others it was in the neighborhood. From three to ten ounces of blood were withdrawn, according to the vigor of the patient.

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SATURDAY, SEPTEMBER 29, 1900.

THE PATHOGENY OF GOUT.

IT is an interesting index of the perennial freshness of problems dealing with the causes of human suffering to find the pathogeny of gout at the head of the program of the Thirteenth International Congress of Medicine, held in Paris last month.

The pathogeny of gout is a subject which has engaged the attention of both clinical and laboratory investigators from time immemorial and has probably given rise to more speculation than any other question with which the medical man is called upon to deal.

The protean character of typhoid is well recognized, but compared to the manifold manifestations of gout the comprehension of the former disease is a matter of childlike simplicity. A mere glance at the literature of gout is enough to overwhelm one by its very infinitude.

Through the labors of physiological chemists we know that the materies morbi—the peccant matter—which causes gout is uric acid or certain of its derivatives, but its exact modus operandi continues to elude even the most refined methods of laboratory research. This throws the burden of explanation of the pathogeny of the disease upon the clinicians; in other words, renders the subject one of pure speculation.

Fortunately for us, the disease is not common in America, so that at present we have little opportunity either for extended clinical observation or for the speculation to which such opportunity seems inevitably to give rise. The very youthfulness of our civilization is our safeguard from the malady; but, alas, even so young a country as ours will grow old sometime, and we may look confidently forward to the day when our golden and gout-free age will give place to a gouty and speculative one.

In England and continental Europe, where civilization is already centuries old, the speculative tendency with reference to the pathogeny of the disease under discussion has been rife for more than a hundred years. Even before the days of animal chemistry gout was believed to be due to a perversion of physiological function, the result of which was certain "peccant matters" which were supposed to be distilled into the joints. This was the so-called "humoralistic" doctrine, and it held sway with practical universality until Cullen introduced the "solidistic" theory that "gout was an affection of the nervous system in which the primary moving powers of the whole system are lodged."

From Cullen's time to the present the terminology of theorists has become more scientific, perhaps, but it can hardly be said that we are appreciably nearer to a clear understanding of the problem of pathogenesis. Experts in the matter all over the world seem now to be in accord as to the paramount importance of the pathogenic rôle of uric acid in the disease, but just how this acid gets its origin and does its mischief is a question which remains in all its old-time obscurity. We are assured that heredity is a predisposing factor of vast importance and that, given this factor, combined with the peculiar vice of nutrition to which it inevitably leads, we may confidently look for uric acid and gout in certain members of a family. But just what the factors are which originate the causal nexus between the peccant matter and its clinical manifestations promises to remain a fruitful source of speculation.

At this point a word as to the diabolical malevolence of gout may not be out of place. Unlike syphilis its transmissibility does not wane with a person's age. On the contrary the first children begotten by a goutily-disposed parent may escape the inheritance of the diathe-

sis, while with succeeding offspring the danger of its inheritance increases so constantly that the cadet of the family—in countries where the law of primogeniture prevails—has little to expect from paternal bounty outside of an organism which in time will yield him a fine line of uratic tophi, to say nothing of a chronic interstitial nephritis.

To sum up in a word the modern theories of the pathogeny of gout, they embrace the most plausible ideas of the humoralists and solidists combined; that is to say, they admit "peccant matter"—uric acid and its derivatives—which exert their noxious influence upon the economy, in part, at least, through nervous or trophic influences.

Viewing the subject broadly, but little objection can be offered to such theories, but we cannot refrain from expressing a certain degree of surprise at finding that one very noted exponent of the neuro-humoral theory who took part in the discussion at the International Congress, Sir Dyce Duckworth, still persists in locating the neural origin of the disease in the bulb. When this celebrated English author published his well-known treatise on gout several years ago, he then expressed the opinion that there was a bulbar center which had to do directly with the trophism of joints. This opinion he based on the fact that a certain observer, whose name now escapes us, found bulbar sclerosis in a case of locomotor ataxia which had been marked during life by the presence of that peculiar trophic disturbance in the joints known as tabetic arthropathy.

Now, from our present advanced knowledge of the anatomy, physiology and pathology of the nervous system, it is at once obvious that a bulbar center having any such specific function as Dr. Duckworth claims can only exist in the realms of fancy, and we are sorry to find him still retaining such a weak link in his chain of reasoning.

After all has been said, it cannot be denied that the pathogeny of gout is a most attractive subject. The truth of this is obvious from the fact that it has drawn to its study many of the brightest minds that have adorned the profession since the time when the disease first began to menace the well-being of humanity. Nevertheless we cannot refrain from saying that we believe the problem to be one which will continue to rear its sphinx-like countenance to numberless medical generations yet unborn.

OYSTERS AND INFECTION.

From the earliest times more or less suspicion has been cast upon shellfish—chiefly oysters and mussels—as being the cause of outbreaks of disease among consumers. For the most part these have been cases of sudden poisoning due to the presence of putrefactive products in the molluscs and diseases due to a specific micro-organism, where there is a period of incubation and where, therefore, a considerable interval has elapsed between the time of entrance of the germs into the body and the actual manifestations of the illness. In the latter case it is obviously far more difficult to establish the source of infection; and despite the frequent positive assertions crediting certain epidemics of typhoid fever to the consumption of oysters, it must be confessed that the alleged association of cause and effect in these outbreaks has more popular support than scientific demonstration. And yet, notwithstanding the absence of the clinching evidences of absolute proof, there is much in the connection between the two which makes it a possibility, indeed, a probability.

During recent years much public interest and apprehension have been raised by several outbreaks of enteric fever popularly attributed to oysters, such as that of the Wesleyan University in Connecticut, investigated by Professor H. W. Conn in 1894; that of Stirling Ball in October, 1895; and that in the south of France reported on by Dr. Chantemesse in 1896. It has been apparent from these and numerous other similar epidemics that the condition under which the shellfish were liable to contamination with sewage, and thus became the carriers of pathogenic organisms, required investigation. Studies pursued along these lines by Professor Herdman, of the Lancashire Sea-Fisheries Committee, and Dr. Boyce, of University College, Liverpool (*Thompson-Yates Laboratory Report,* Vol. 2, 1900), have thrown much light upon this important problem, the far-reaching significance of which cannot be too strongly emphasized.

Some very instructive and interesting experiments were made by these investigators on the feeding of oysters with normal feces and the feces of patients suffering from typhoid fever. It was found that oysters could, up to a certain point, render sewage-contaminated water clear, and that they could live for a prolonged period in water rendered completely opaque by the addition of fecal matter; that the fecal matter obtained from cases of typhoid was more inimical

than that obtained from healthy subjects. The results of the bacteriological examination of the pallial cavity of the oyster and of the contents of the rectum showed that in the case of those laid down in the open waters of the Bay the colonies present were especially small in number, while in those laid down in proximity to the drain-pipe of a town the number was enormous. In the case of the oysters grown in waters infected with the bacillus typhosus, it was found that there was no apparent increase in the organisms, but that they could be identified in cultures taken from the water of the pallial cavity and rectum fourteen days after infection. It was further determined that the bacillus of typhoid fever would not flourish in clean sea-water, and the experiments seemed to show that it decreased in numbers in its passage along the alimentary canal of the oyster. It would seem probable, then, that by methods similar to those employed in the *bassins de dégorgements* of the French ostreiculturists, where the oysters are carefully subjected to a natural process of cleaning, oysters previously contaminated with sewage could be freed of pathogenic bacteria or their products without spoiling the oyster for the market. Thus in a series of tests with oysters infected with the typhoid bacillus and subjected to a running stream of clean sea-water, the results were definite and uniform. There was a great diminution or a total disappearance of the germ in from one to seven days. Under ordinary conditions the colon group of bacilli is commonly present in shellfish as sold in cities, and especially in oysters—a finding which naturally suggests sewage contamination.

It need scarcely be remarked that if it becomes possible to cleanse infected oysters by a simple mode of treatment, such as that just mentioned, which will render them innocuous, a great boon will have been conferred upon both the oyster-trade and the oyster-consuming public. Those in charge of matters of public hygiene will find in this a theme for consideration.

PENNSYLVANIA STATE MEDICAL SOCIETY.

THE fiftieth annual meeting of this society held last week at Wilkes-Barre was a most successful one. The fact of there being an important strike in progress did not interfere either with the social or scientific features of the meeting, both of which were thoroughly enjoyable. To the Luzerne County Medical Society the success of the former is due. The latter were made manifest in a most varied program of papers of high value. The address of the President, Dr. George W. Guthrie of Wilkes-Barre, while on a subject so well gone over, was presented with a force and fervor worthy of its reader.

Several features stand out in the program which are worthy of emphasis, coming as they do from this, one of the oldest State medical societies of this country. The subject of water pollution and its municipal and State control was discussed quite thoroughly. It is to be regretted that the clashings of authorities shoud continue to stand in the way of effecting much needed reforms along these lines, yet such is the case in this as well as in many other States.

In the address on obstetrics by Dr. Noble of Philadelphia the significant fact was brought out that, although there had been a most marked reduction in the mortality among women in childbirth in the cities of this country, a like reduction could not be shown for the women of country districts. This would seem to indicate that efficient aseptic midwifery is not as widespread as it should be. He also spoke of the gradual and long-looked-for return to conservative surgery of the female generative organs. It is to be hoped that the era of reckless abdominal surgery in woman has been permanently ended.

In the symposium on typhoid fever Dr. H. A. Hare recurred to the important topic of variations in this disease. He emphasized the importance of recognizing the cases with sudden acute onset, and said that typhoid fever is much more commonly aberrant in type than is usually taught. He further brought out the interesting fact that the recent great increase in typhoid fever, due to the Spanish war, was accompanied by a very marked decrease in the already decreasing death-rate from this disease. Dr. Stengel, in discussing the treatment, plead for a wider choice of individual therapeutics. While the Brand method has undoubtedly given most excellent results, it is not necessarily to be used to the exclusion of all other modes of treatment. The use of camphor was recommended by him quite highly. This stimulant has long enjoyed a popularity with some practitioners and it has become once more a fashion to use it in place of, or as synergist to, alcohol. It undoubtedly deserves wider use.

These with other papers were widely discussed at the meeting which was attended by over 300 members. We present a complete report to our readers in this week's issue of the MEDICAL NEWS.

ECHOES AND NEWS.

NEW YORK.

Densest Population.—The daily press announces that the block bounded by Sixtieth and Sixty-first Streets, Tenth and Eleventh Avenues, New York, is the most densely populated block in the world. The new census shows it to have 6888 inhabitants.

Tuberculosis and Notification.—Dr. Black, Assistant Sanitary Superintendent of the Borough of Brooklyn, says that at least fifteen physicians in that borough have failed to report cases of tuberculosis. He has had one arrested and intends to make a test case.

Water Famine.—Should the present drought be unbroken, Brooklyn and the Bronx will suffer severely from the scarcity of water. Sensational newspaper articles are claiming a great increase in typhoid and malaria. The connection of the latter with diminished water-supply, or even the former, is difficult to trace.

Use of Soft Coal.—Dr. F. H. Dillingham, Assistant Sanitary Superintendent, reports that the Board of Health as yet has no outlined policy in regard to the enforcement of the ordinance against the use of soft coal. This ordinance is directed not really against the use of soft coal but against the increased amount of smoke caused by the use of it. As long as the smoke does not pass a certain limit the Board does not know or care how many factories use soft coal. In the present strike emergency the Board of Health does not intend to interfere with the industries of the city. But any attempt to use the cheaper coal indefinitely at the expense of the purity of the air will be checked.

Hospital for Consumptives.—Subject to the approval of the State Board of Health and the Forest Preserve Board the Commissioners of the new State Hospital for Consumptives have selected a site at Big Clear, near Saranac Inn station. The commission consists of Howard Townsend, Dr. John H. Pryor, Dr. Willis S. Macdonald, Walter Jennings and Frank E. Kendall, and their decision was reached at a meeting held at the Fort Orange Club in Albany. For reasons which were chiefly sentimental the site at Dannemora, which was the subject of a recent commendatory report by Commissioner Montanye, of the State Prison Commission, was not selected. Of the Big Clear site it was said in objection that it is near a large body of water and subject to heavy rainfall. The commissioners, however, felt that they did not care to associate their hospital with a locality in which a prison is situated, and decided on the more expensive site. It is understood that the two bodies that are to pass finally on the matter do not like the selection either from an economical or a sanitary point of view.

Malaria and Garbage.—An epidemic of malarial fever has broken out on Coney Island, and over 300 cases have been reported from various parts of the island. On one street thirty-six families were afflicted and the physicians in the neighborhood have their hands full. Dr. John F. Hill, of Gravesend, reported 140 cases, Dr. John F. Pierce 185 cases, and Dr. Sigmund Peck 60 cases. It is said in Coney Island that the epidemic is the result of the dumping of garbage from Brooklyn on the west meadows along Coney Island Creek. Last week sixty-five carloads of refuse were dumped on the meadows, and the residents of Coney Island are up in arms. The contractor who has had the garbage dumped on the meadows was arrested twice, but when arraigned in the Coney Island Police Court was discharged on both complaints. Dr. Hill says that the dumping of garbage on the meadows is an open violation of the laws relating to the disposition of city refuse. Mosquitoes are in great abundance about the garbage.

Havana and Yellow Fever.—The present outbreak of yellow fever in Havana does not, in the opinion of Dr. Doty, the Health Officer of the port, involve any danger to this city. "The condition of affairs in Havana is very bad indeed," said Dr. Doty last week, "and the work of stamping out the yellow fever there is made difficult by a considerable number of cases that are not reported to the authorities. But here in New York we need not be afraid of it. The inspection at Quarantine is made more laborious for us, and we may find a fever patient or two; but the disease cannot live in this climate, and there is not the slightest danger of its spreading. In the course of another month the weather will have become so much cooler that even the Southern cities will have little fear of it. A good frost is a sure protection. But there is a very serious side to the matter, and one that cries out for action by Congress. General Wood has done all that human skill and energy could do with the means at his disposal. He has cleaned up Havana as it never has been cleaned before, and still the fever lives. And the fever will continue to live, and break out every summer, until $10,000,000 or $15,000,000 are put into a first-class sewerage system for Havana. The streets there now are not properly graded or paved, and many of the sewers, where there are any sewers, cannot carry off the waste that is poured into them. A house built on the best sanitary principles may be set over a choked sewer or sewage-soaked ground, and then all its fine plumbing is worthless. Nothing but a thorough system of new sewers and the removal of the wooden work on the waterfront can secure safety. Congress must do this work. The Cubans never will do it, for they are immune to the fever, and don't care. And besides that, they won't spend the money. It is of the highest importance, in my opinion, that Congress should take hold of this matter. Business reasons alone demand it. The

fruit trade is practically shut out from the Gulf ports during the summer, no one can come from Havana to this country by way of Florida, and even the shipping to New York is subject to serious delays ad restrictions. Havana must be made clean, and Congress must pay for the work." Over 100 cases of yellow fever are now under treatment in the city of Havana. During the month of August there were 54 cases with 49 deaths. The disease is practically epidemic.

PHILADELPHIA.

Obituary.—Dr. W. Scott Wolford, formerly coroner's physician, died September 18th after a long illness. He was associated in practice with the late Dr. Chapman.

Homeopathists in Session.—The thirty-sixth annual session of the Homeopathic Medical Society of Pennsylvania was held in Wilkes-Barre, September 25-27th. The Society is seeking the establishment by the Legislature of a hospital where insane patients may receive homeopathic treatment.

Company Physicians.—The strike of the anthracite coal miners has brought up a question which is interesting to the medical fraternity. The miners demand the abolition of company physicians, paid by the retention of a certain amount of their wages. Several of the operators state that such a rule is now enforced at very few mines, the miners being allowed to select their own physician.

Quarantine Station Wrecked.—To avoid collision with another boat the British steamer "Fallodon Hall" was run into the artificial island upon which is built the Reedy Island quarantine station. The accident occurred during a fog September 22d. The signal tower was carried away and the disinfecting barracks badly damaged.

The Duties of Parenthood.—Under the auspices of the Pennsylvania Society of Mothers a course of Monday afternoon lectures is to be given, beginning October 1st. The subject will be "Life and Education" and the aim is "to develop wiser and better-trained parenthood, to establish kindergartens and laws which will adequately care for neglected and dependent children, and to establish juvenile courts which will rescue instead of confirming children in evil ways." Men will be admitted to active membership in the Society.

Health of City Exceptionally Good.—The past week has shown a better health average than for the corresponding period of the last three years. One case of smallpox was discovered in the twenty-second ward. The only disease unusually prevalent is diphtheria, 101 cases being reported. A commission has been appointed to condemn land in various localities for the inauguration of filtering plants. The Mayor has suggested that in connection with these plots buildings might be erected to relieve the overcrowded condition of the insane wards of the Philadelphia Hospital.

Polities Charged with Continuing Nuisance.—The citizens at Thirty-seventh and Wharton Streets are vainly trying to secure the abatement of a nuisance in the shape of dust from two paving companies' plants. The plants were ordered closed by the Board of Health, but the order was ignored. A later report of the medical inspector practically ignored the plants. A councilman is part owner of one plant and the present Board of Health was appointed by the Mayor, the old board being abolished at his request. The matter has been carried to the courts by interested citizens.

Jefferson Medical College Hospital.—This hospital has responded nobly to the calls for help from the Galveston sufferers. Besides furnishing medical supplies, the first relief train sent out by the *North American* carried a physician and eight nurses from the hospital corps. A large tent has been erected and this improvised hospital bears the best record of any established within the zone of the disaster. The corps is under the charge of Dr. E. R. Kennedy.

State Medical Society Notes.—The oldest delegate present was Dr. J. A. Ehler of Lancaster. He is eighty years of age, was at the first meeting of the society, and is still in active practice. A special vote of thanks was tendered the Wilkes-Barre papers for the unusually accurate reports of the meeting.—The discussion on State laws elicited the fact that a school of osteopathy in Wilkes-Barre has 150 students, each of whom pays an annual tuition of $300.—The resemblance of the newly-elected President, Dr. T. D. Davis, to President McKinley led to a laughable incident Thursday. Dr. Baldy of Philadelphia impeached a certain member of the society, denouncing him in strong language for a breach of professional etiquette. The crime of the gentleman consisted in scattering broadcast through the town his own picture. When the society was in a high state of excitement the speaker uncovered a portrait of McKinley and the laugh was on Dr. Davis.

CHICAGO.

Elephantiasis.—A Mrs. Griswold, colored, recently died at the Cook County poor-house of this disease. Up to the time of death she weighed 500 pounds. It is said that her limbs were the size of an average man's body. For several months she practically lived in a chair. Her coffin was seven feet long, four feet wide, and three feet deep.

Arrival of Dr. Barker.—Dr. L. F. Barker, from the Johns Hopkins University, has assumed his duties as Director of the Department of Anatomy at the Chicago University and at Rush Medical College.

Drug Adulteration.—At a recent meeting of the Wholesale National Drug Association, held in this city, the manufacturers and jobbers who sell adulterated drugs were roundly scored. A

committee of the Association made the following recommendations: That we deprecate the sale of misbranded and adulterated foods and drugs; that we constantly keep before us the importance of quality in the products we sell, on many of which life is often dependent; that we reiterate our endorsement of the Brosius pure food and drug bill; that we label correctly and definitely all goods we sell; that we carefully consider the advisability of advocating the sale by assay, chemical or otherwise, of the drugs and medicinal products which contain alkaloids, resins, oils, oleoresins, and essential oils.

State Laboratories.—Dr. Frances Dickinson, President of the Illinois Educational League, is making an effort to secure from the State Legislature an appropriation of $50,000 to be used in establishing in Chicago and in other cities of the State laboratories for the teaching of the sciences of physics, chemistry, bacteriology, biology and microscopy, and for extension courses throughout the State in sanitary and agricultural sciences. It is intended that the laboratories shall be open in the evenings, to enable bread-winners to procure a higher education than they are able to get now.

Physicians' Club.—At a meeting, held September 24th, the requirements for admission to medical schools were discussed. The discussion was opened by Professor O. W. Small of the University of Chicago.

College of Physicians and Surgeons.—The following appointments have been made in this medical school: Dr. Harris E. Santee, Professor of Anatomy; Dr. John L. Porter, Professor of Orthopedic Surgery; Dr. Joseph M. Patton, Professor of Physical Diagnosis; Dr. Daniel N. Eisendrath, Professor of Clinical Anatomy; Dr. Don L. Shaw, Professor of Anatomy; Dr. Julius H. Hoelscher, Professor of Clinical Medicine; Dr. Bernard Fantus, Adjunct Professor of Materia Medica; Dr. August F. Lemke, Adjunct Professor of the Practice of Medicine; Dr. Edward H. Lee, Adjunct Professor of Practice of Surgery; Dr. James M. Neff, Adjunct Professor of Practice of Medicine; Dr. A. E. Baldwin, Adjunct Professor of Stomatology; Dr. Eugene R. Whitmore, Adjunct Professor of Chemistry; Dr. Samuel J. Walker, Adjunct Professor of Clinical Anatomy and Instructor in Surgery; Drs. Edward F. Wells, William K. Jaques, and James W. Walker, Adjunct Professors of Practice of Medicine; Dr. Leo Loeb, Assistant Professor of Pathology; Dr. William H. Rumpf, Instructor of Gynecology.

GENERAL.

Pollution of the Navesink.—The residents of Red Bank, N. J., are up in arms over the pollution of the river from which they derive their revenue. The oyster-crop is said to be rendered totally unfit for sale.

Bee-Sting Causes Death.—A death from the effects of a bee-sting followed by septic poisoning is reported from Paterson, N. J.

American Association of Obstetricians and Gynecologists.—The officers for 1901 were elected as follows: President, Dr. W. E. B. Davis, Birmingham, Alabama; First Vice-President, Dr. Edwin Walker, Evansville, Indiana; Second Vice-President, Dr. A. Goldspohn, Chicago, Illinois; Secretary, Dr. William Warren Potter, Buffalo, New York, re-elected; Treasurer, Dr. X. O. Werder, Pittsburgh, Pennsylvania, re-elected. Cleveland, Ohio, was selected as the place for holding the next annual meeting; time, second Tuesday in September, 1901.

Vienna University Changes.—Docents L. Königstein, Solomon Ehrmann, Jacob Pal, Emil Redlich and Anton Elschnig have been appointed "ausserordentlichen" Professors. Dr. Ludwig Braun has been appointed Docent.

The Xi-phopages Twins.—The Medical News of March 5th described the first operation on these twins Later reports show that Marie died as a result of the operation. Rosalina survived, however, and has just arrived in Paris where she expects to present herself to the scientific societies of that city and of the other European medical centers.

Poisoning by Laburnum.—The Bradford Cinderella Club of England recently took 600 children from the slums to the country. Some twenty developed symptoms of acute narcotic poisoning from eating laburnum pods. All of the children recovered.

Death from Canned Tomatoes.—A death in England is announced of a boy from eating canned tomatoes. The post-mortem evidence was conclusive.

Plague at Glasgow.—The situation at Glasgow has settled somewhat. After the temporary flare-up of last week the number of reported cases has fallen markedly. At the present time there are but forty suspects under observation; fifteen cases are being treated; seven deaths have occurred.

The Reformation of America.—The following charming bit is just received from England, although a trifle belated. *The Bristol Medico-Chirurgical Journal* of June makes the following comments regarding its own potent influence on the medical world. "Its circulation now extends from China to Peru. There is not a country in Europe where its influence is not felt. *It is reforming the American continent from Canada to the Brazils.*" We have been noticing the reform and are glad that we now know whom to thank.

Yale Notes.—Prof. George Trumbull Ladd, of the department of psychology and mental philosophy at Yale, has returned from his long tour among the national universities of Japan, India and Egypt. He visited the Paris Exposition in

August as an American delegate to the International Psychological Convention.

New College Buildings.—Several important new buildings are to be opened soon at leading educational institutions of New England. It is reported that the Harvard medical school will be moved to Brookline soon. The medical, veterinary and dental departments, now in various parts of the city, will be united and equipped with a museum and new laboratory. The future school with its grounds will cover twenty-seven acres and will cost $1,000,000.

Science and Pharmacy.—During the recent International Congress of Pharmacy held at Paris a monument was unveiled to Bertrand Pelletier and J. B. Caventon, who are celebrated as the discoverers of brucine, strychnine, and quinine. These two renowned pharmaceutical chemists, when they had discovered quinine, immediately presented the results of their investigations to the Paris Academy of Sciences on September 11, 1820, thus placing this important drug at the command of the medical profession. Instead of keeping their discovery secret, they published a full account of their methods and results, and stated how they had been able to isolate cinchonine and quinine from both yellow and red cinchona bark, and also added their observations on the therapeutic properties of these substances. For their discovery and the valuable services rendered to science they received the Montyon prize of the Academy of Sciences, and the monument now erected is a further testimonial to their services to science and humanity.

Railroad Disinfection.—The Cleveland, Cincinnati, Chicago and St. Louis and the Chesapeake and Ohio will make experiments with new railroad coaches, which are to be constructed on a more sanitary principle than the present carriages, conforming as nearly as possible to recommendations of the Railway Surgeons' Association. According to the views of this organization, there are many things in the modern coach which tend to catch and retain dirt and filth, and which offer hiding-places for many disease germs. The plainer the build inside and the fewer decorations and fineries a coach contains the better it is for the travelling public. Sanitation, it is alleged, has been sacrificed to comfort. Plush seats and carpets on the floor are especially objectionable. Steam-pipes should remain uncovered, and fancy cornices and filigree work on sides and ceilings should be done away with. The reception of these cars by the public will be watched with interest by all the railroads, as their success will mean a great saving of expense and trouble to the roads.

Doctors Combine.—The Physicians' Business Association, recently organized in Detroit, would be more appropriately called the Detroit Physicians' and Surgeons' Union No. 1, *The Tribune* of that city says. In intents it is a union, its chief object concerning wages. "If any employer refuses to pay his doctor, or insists on compensating him with wages below the union scale," *The Tribune* explains, "the doctor will strike, just as the miners have struck—that is, he will refuse to treat him any more, refuse to work for him. All the other union doctors must likewise strike, and refuse treatment to the employer who refuses honest pay for honest service." At the first meeting of the Association there was violent talk on a proposition to boycott doctors who should refuse to join the Association. A section of the constitution offered for approval went so far as to provide that Association members should refuse to recognize as physicians, either personally or professionally, such boycotted doctors. There was at first some objection to so radical a measure, but the vote showed that the sentiment favored it in overwhelming measure.

Drunkenness in London.—A parliamentary return on the working of the Inebriates Act, under which the Magistrates are able to commit habitual drunkards to inebriate reformatories, discloses the startling fact that of ninety-two such convictions ninety were women. Such convictions would be more numerous but for the fact that State reformatories do not exist, but it is significant that of the six institutions existing five are for females. Within the London Metropolitan police district there are 11,000 public houses. The temperance reformers say that this oversupply is greatly responsible for the fact that there were 46,899 arrests for drunkenness in London in 1897, but whatever may be the moral effect one result of the great number of licensed liquor shops is certain, *viz.*, the hindrance of street improvements in London, for the value of the licenses in addition to the cost of acquiring property must be paid by the rate-payers. An example of the seriousness of this cost is seen in the case of an avenue now being made connecting the Strand with Holborn. The purchase price of liquor licenses along a route of less than half a mile in length was over £100,000. This has been the cause of the abandonment of many desirable improvements in London.

Obituary.—Dr. I. Zacharie, an old resident of New York but established in London as a chiropodist and bonvivant, has just died in London.—Dr. Richard H. White of 120 West Forty-eighth Street, died of phthisis in Liberty, N. Y., September 22d at the age of thirty-two years. He graduated from the University of Toronto and devoted his time subsequently to the study of tuberculosis. Dr. White leaves a widow and one daughter.—Dr. Max Schaeffer of Bremen, specialist in diseases of the larynx, died recently while making an Alpine tour.—Dr. Preston B. Scott of Kentucky died Monday, 24th, aged sixty-eight years. Dr. Scott came of an old Kentucky family. His father was a prominent figure in Frankfort in which place Dr. Scott was born. After the war Dr. Scott settled in Louis-

ville and became widely known throughout the State. He was President of the Association of Physicians and Surgeons of the Confederate Army and Navy. He has a brother who is also a physician.—Dr. James Hart Curry, who had practised medicine for over fifty years in Westchester and Putnam Counties, died recently at Shrub Oak at the age of seventy-three. He was educated at the Peekskill Military Academy and the Yale Medical School, from which he was graduated in 1852. He served in the war as a surgeon in the Eighteenth Regiment, New York Volunteers. For some years he was President of the Yale Medical Alumni Association.

Pasteur Institute in India.—David Semple, M.D., major in the British Army Medical Corps, formerly assistant professor of hygiene at Netley, the first officer appointed to the Pasteur Institute in India, opened recently at Kasauli, and he will assume the chief superintendence.

Electricity in Medicine.—The tenth annual meeting of the American Electro-Therapeutic Association was held this week at the New York Academy of Medicine.

American Public Health Association.—The twenty-eighth annual meeting of the Association will be held at Indianapolis, Indiana, beginning October 22d and continuing until October 27th. A long and varied program is announced.

Risked Life for Diploma.—Dr. Lester Winn of Borough Park, Brooklyn, nearly lost his life September 25th, while attempting to save his diploma of the College of Physicians and Surgeons from his burning residence at Fourteenth Avenue and Fiftieth Street. When the fire was first discovered it was with difficulty that the doctor and his two servants were aroused and carried out by the firemen. A few minutes later Dr. Winn rushed back in the burning cottage for his diploma, which was in the front room on the second floor. He succeeded in finding it, but while groping about the lower vestibule was overcome by smoke. Fireman Cantwell found the physician unconscious on the floor and dragged him to the open air, where he was revived. The diploma was recovered, after the fire had been extinguished, near the spot where the doctor had fallen unconscious.

Identification of Criminals.—Through an arrangement made at Cleveland, Ohio, this week, between Superintendent of Prisons Collins and the representatives of nearly all the penal institutions in the United States that use the Bertillon system of identification, the State central bureau of identification at the capitol in Albany will be used as the central bureau for all these institutions. It is hoped by such an interstate system that the identification of criminals will be facilitated and life and property will be more secure.

OBITUARY.

The life of a physician makes perhaps the most interesting of all biographies. And those who are themselves physicians know what it means to have lived a life of increasing fame. Between the lines that are crowded with mention of honors and success, they can read the long years of patient preparation, the steady enthusiasm, the persistent effort, the untiring patience that have made their names great.

It is like reading a death-roll of heroes to see in the same obituary columns the deaths of three such famous men as Dr. Hunter Holmes McGuire, Dr. Lewis A. Sayre and Dr. Alfred Stillé. All were elderly men, the last two very old. All were men of world-fame, and all will be mourned by their profession.

DR. HUNTER HOLMES McGUIRE

When a man is not only a physician, but a soldier, a scientist and a patriot, when he has seen thrilling service in wars, when he has made advances in the world's science, and when he has associated himself intimately with affairs civic, the life reads more like a novel than a biography. Such a man was Dr. Hunter Holmes McGuire who was born in Winchester, Va., 1835, and who died on September 19, 1900, at his country home on the Broad Road, Richmond, Va.

Dr. McGuire's character and power were not of the order of the self-made man, who triumphs in spite of circumstances, but of that finer, deeper kind that comes through heredity and careful training. He was descended directly from Thomas Mor McGuire, Lord of Fermanagh, Ireland, who was born in 1400, and was the son of Dr. Hugh Holmes McGuire, a prominent physician and surgeon in the South. From his father he received that careful preliminary training so essential to scientific development, and during his childhood lived in an atmosphere of intellectual progress. It was in the Winchester Medical College, of whom his father was one of the founders, that he began his medical studies, and it was from his father that he received his first instruction in surgery. He graduated in 1855 and then planned to continue his studies in Philadelphia at the University of Pennsylvania and the Jefferson Medical College; but ill health compelled him to relinquish this idea and he returned to Winchester where he served one year as professor of anatomy in the Medical College; but in 1858, feeling the need of greater clinical opportunities, he left the practice that he had started and returned to Philadelphia. There he not only carried on his advanced studies, but organized a large quiz-class for medical students that was largely attended by the Southern men. It was owing to this intimate relationship as an associate of these students that his power rose as a leader, and when at the time that John Brown's body was brought through Philadel-

phia, and the city was aroused to a pitch of great excitement, Dr. McGuire led three hundred students to Richmond where they felt that they could continue their studies under more favorable circumstances. There they were received with a stirring patriotic speech by Governor Henry A. Wise, and were matriculated without charge by the Medical College of Virginia. The city council even reimbursed the patriotic band to the extent of their traveling expenses; and

soon commissioned surgeon in the Virginia State forces, and then was appointed medical director of the Army of the Shenandoah, then under command of General T. J. Jackson.

It was during those years of the war that the young surgeon, not thirty years of age, did the brilliant work that recommended him to the personal friendship of his General, to whom he rendered the hero-worship of the youth, combined with the man of genius. In all battles his serv-

HUNTER HOLMES MCGUIRE, MD., LL.D.

Dr. McGuire received his degree of Doctor of Medicine a second time from the college.

It was during the following year, while Dr. McGuire was studying and teaching another quiz-class in New Orleans, that the secession of South Carolina occurred; and fired with that patriotic spirit which has characterized his whole life as a citizen, he hastened home and volunteered as a private in Company F, Second Virginia Regiment, and marched on April 1, 1861, from Winchester to Harper's Ferry; but he was

ices were reported with commendation, and his efforts to better methods of medical field service were supported by the commander, who recognized his ability and zeal. He organized the Reserve Corps Hospitals of the Confederacy, and perfected the ambulance corps; and from his experience evolved the daring and successful operations in abdominal surgery, which he presented after the war in a paper read before the American Medical Association. In this he advocated operative intervention in gun-shot wounds of the

abdomen. Prior to that time bullet-wounds in the intestines were inevitably fatal, and the United States Surgeon-General, in his report of the war between the States at that time, stated that there was not a well-authenticated case on record that recovered without an operation. This paper of Dr. McGuire's excited much attention and did much toward establishing the frequency of such operations which now save 67 per cent. of the lives. With Dr. Sims and Dr. Kinloch, Dr. McGuire shared the honor of being the pioneer in this branch of surgery, and his "Chapter on Gunshot Wounds" is one of his most noted surgical works.

It is not to be wondered at that the friendship of Jackson, Lee, Early and Elwell, whom he attended when sick or wounded, bound his sympathies to the Southern cause. His personal attendance on General Jackson, in whose Stonewall Brigade he was surgeon, the gift of a sword from his own hand, and his memory of the commander's last word's, "Let us cross over the river, and rest under the shade of the trees," as he ministered to him in his last moments, all served to arouse in him the strong patriotism, which after the War showed itself in his public-spirited efforts on behalf of the South. He kept alive by personal anecdote and stirring articles of reminiscence the tales of Southern heroism that form as integral a part of the nation's history as those of the triumphant North; and he took a prominent part in the investigations of the histories used in his State, and was instrumental in having those by Southern authors, and books containing the spirit of Southern literature used in the schools. All important topics concerning the advancement of the South were dear to him, and he gave his time and his advice freely to matters of public welfare.

After the war was over Dr. McGuire, who had finally been made the Medical Director of the Army of the Valley under Early until the surrender at Appomattox, returned to private life and began the practice of medicine in Richmond, practically a poor man. But the genius that had won him recognition even in his student days soon brought him practice. He was appointed to fill the chair of surgery in the Medical College of Virginia, as successor to Dr. Charles Bell Gibson. Popularity soon passed into fame. His successes were striking, his work original and careful, and his investigations those of a profound and critical thinker. His practice increased throughout the State and his advice was sought by his most distinguished contemporaries; and yet throughout the busiest days he found time for individual philanthropic work among the poor, and for personal sympathy and advice, especially to students and young men, whose friend he had been ever since his own student days.

In 1866 Dr. McGuire married Miss Mary Stuart of Staunton, Va., daughter of the Hon. Alex. H. H. Stuart, who was Secretary of the Interior under President Filmore, and had nine sons and daughters, all of whom, as well as their mother, survive him. Added to his family life and his professional clientèle was a large social circle of the most prominent people in Richmond and Virginia, among whom he was one of the most conspicuous figures. So widely known was he that when on the 19th of March of this year he was suddenly stricken with paralysis which rendered him speechless and helpless the profoundest regret was expressed throughout the city; and his death which followed six months of suffering was a source of sorrow to hosts of friends, and a loss to the professional men of the whole country.

Dr. McGuire's remarkable successes in lithotomy, lithotrity, and ovariotomy, and his works upon surgical subjects attracted the attention of surgeons in Europe as well as America. He was the friend and contemporary of such men as Sims, Campbell and Butty, and without doubt one of the greatest surgeons that the South has ever produced. All the honors that his State and country could give him were his. The degree of Doctor of Laws was conferred upon him in 1887 by the University of North Carolina, and in 1888 by the Jefferson Medical College of Philadelphia. He was president of the Richmond Academy of Medicine in 1869; of the Association of Medical Officers of the Army and Navy of the Confederate States in 1875 and of the Virginia Medical Society in 1880. But his truest honors were in the works in which he was engaged. As president, and professor of surgery of the University College of Medicine, and as surgeon-in-charge of St. Luke's Home for the Sick, he did work that will stand as a monument to him. Doubtless there is not a surgeon throughout the land but will pay his memory the tribute of a reverent regret and the appreciation of the brilliant far-reaching work of his full and eventful life.

DR. LEWIS A. SAYRE.

Dr. Lewis A. Sayre, whose name for fifty years has been a synonym for some of the most brilliant work in orthopedic surgery, died quietly at his home on September 21, 1900. For a year his health had been gradually failing and he had given up all active work; but no illness, other than the natural failing of old age, caused his death.

Dr. Sayre was born in 1820 in the town of Madison, N. J., and has been essentially a New York man, having pursued his medical studies at the College of Physicians and Surgeons, and gained his experience and made his discoveries in the clinics of this city.

Dr. Sayre had some amusing experiences while he was a medical student which he was fond of relating. The College of Physicians and Surgeons was then at 65 Crosby Street, near Spring. One day Dr. Post, one of the operating

surgeons, was about to cut off an Irishman's leg. Young Sayre had made complaints that the talks in connection with the operation were not explicit enough, so Dr. Post went into an elaborate exposition of flaps and circular flaps, the application of the tourniquet in amputations, the stoppage of hemorrhage by hot iron, and the various kinds of amputations.

The Irishman lay on the operating-table in full possession of his faculties, and as he listened to Dr. Post's discourse he grew whiter and whiter. Finally he jumped from the operating-table crying, "Get me me breeches, be gob; I'll die with me leg on!" And with that he was out of the room. The patient was a fireman who had been injured while going to a fire. Dr. Sayre found him several days later in a Watts Street dive, with his knee badly swollen. The young doctor had heard a lecture that morning on "tactus eruditus," so he performed an operation on the fireman's knee, opening the swelling and then binding up the wound. The rest is best told in Dr. Sayre's own words: "When my preceptor, Dr. Green, heard of what I had done he swore a blue streak. 'My God!' he said, 'you have opened the joint, something surgery abhors, a thing no surgeon ever did in the world.' But my patient got better. One day I had no lint to bind his wound with, so I used the tow stuffing sticking out of an old horsehair sofa. When I called again I found the wound open and free from pus, I could only conclude that the tow had caused the difference. I reasoned from this that tow, dipped in Peruvian balsam, would not only disinfect a wound, but would keep it free from pus. And this was the foundation of one of the most satisfactory successes I ever had in surgery. It was the means of introducing into the army the use of tarred hemp, or oakum, as a dressing for wounds. My fireman got well, and for twenty years sold apples from a stand at the corner of Broadway and Prince Street."

Lewis A. Sayre, M.D.

On reaching his degree in 1842 he was appointed prosector to Dr. Willard Parker, who was then professor of surgery in the College of Physicians and Surgeons, and held the position for ten years, when he became surgeon to Bellevue Hospital. Later he was appointed surgeon to the Charity Hospital on Blackwell's Island. It is interesting to note that Dr. Sayre gained his experience, as have done so many of New York's most famous men, in the city's institutions. In those days, as still, the service was severe, exacting and exhausting; but the experience was and is most varied and profitable. Thousands of the city's poor, the halt and the maimed, passed through Dr. Sayre's hands; and from them he learned the arts that have saved other thousands from deformities.

One of his patients, who had in youth been treated for Pott's disease by him, and had grown to be tall and strong, said that it was a not unusual sight to see the children who thronged his waiting-room run and throw their arms about him, begging to be made straight and well like others he had cured.

Dr. Sayre was tendered the position of resident physician of New York by Mayor Fernando Wood in 1860, despite the fact that he had bitterly opposed Mr. Wood's election. This position he accepted and continued to hold under Mayors Wood, Gunther, and Hoffman. During his incumbency New York was given a series of reports dealing with sanitary problems, such as the city had never known before. Dr. Sayre, who was known for his use of vigorous English, and for his progressive medical ideas, attacked first the lack of caution in preventing the spread of smallpox, and was untiring in his efforts to procure compulsory vaccination. The tenement-house evil, which had become apparent as early as 1865, was then taken up by him, and marked improvements resulted. His most important act at this period, however, was the detention of the cholera-infected ship "Atlanta" in the lower bay in 1865. Up to that time cholera was considered to be merely epidemic, and even the physicians of Boston in an official report the same year declared that "the disease is epidemic and cannot be restrained or controlled in its progress by quarantines or cordons of any kind."

To Dr. Sayre belongs the credit of having discovered that cholera is a contagious disease. Through his efforts all ships suspected of having cholera on board were quarantined, and the disease prevented from obtaining a foothold in New York. It was a long time before Dr. Sayre's theory was accepted in medical circles, and for many years New York was the only port where quarantine regulations in regard to cholera were enforced.

He performed the first successful operation for hip disease in this country in 1854; and then demonstrated his method before the medical colleges and societies. Lister, who was a delegate to the International Congress at Philadelphia in 1876, said that this demonstration alone was a sufficient reward for his voyage across the Atlantic. He again gave a series of demonstrations of his treatment of hip-joint and spinal disease as a delegate to the British Medical Association in 1877, before the University College Hospital, Guy's, St. Bartholomew's, St. Thomas', and the Royal Orthopedic Hospital in London. In 1894 at the International Medical Congress in Amsterdam, as well as at similar congresses in London, Copenhagen, and Washington, he read papers descriptive of his improvements and discoveries in the treatment of Pott's disease and various spinal complaints. Thus, he has disseminated the results of his patient, indefatigable work on these hitherto hopeless diseases, for the benefit of humanity, so that the surgeons of two continents have looked to him for their advance in these lines. His practical grasp of orthopedic and spinal surgery has shown itself in the invention of many instruments, in the adaptation of the plaster cast in the treatment of spinal diseases, as well as in many treatises on the subject. Dr. Sayre was at the time of his death a member of the most important medical societies and consulting physician to Bellevue Hospital, City Hospital, St. Elizabeth's Hospital and the Home for Incurables. He was, with his scientific progress and fame, distinctly a healer of the people, and no eulogy of print or press could be as strong as the heart-felt gratitude of the multitudes whom he has saved by his personal treatment, from lives of pain or deformity.

DR. ALFRED STILLE.

The oldest of the three noted physicians who have almost simultaneously finished their work was Dr. Alfred Stillé, who died at his home in Philadelphia, September 24, 1900, after an illness of six months. He was eighty-seven years of age, having been born in 1813. He belonged to an old Pennsylvania family of Swedish origin. In the days of William Penn the land of Olof Stillé, his ancestor, who had settled near Philadelphia in 1638, was known as Stillé's Land, and is now the only homestead of those early Swedish settlers that is known. With the prosperity of the city, the family grew in power, so that the accumulated energy and thrift and culture gave this son of the early century advantages which were sufficiently great to prepare him adequately for the wave of scientific investigation of the last fifty years.

Dr. Stillé was educated at the University of Pennsylvania, receiving his degree of M.D. in 1836, and was then elected resident physician at the Pennsylvania Hospital. Later he went abroad and continued his studies in Paris and other European capitals, thus laying the foundation of the scientific work which has made him famous.

Although Dr. Stillé was widely known in his

own city as a practising physician, both as attending physician to St. Joseph's for thirty years and as lecturer on pathology and the practice of medicine for the same length of time in the Pennsylvania Medical College, and the University of Pennsylvania, yet his fame throughout America and Europe rests chiefly on his scientific laboratory work. He was a careful, minute observer, a bold and patient experimenter, an indefatigable and brilliant writer. His lectures, his books, and the vast output of his laboratory work made his name widely known in America and Europe.

All the honors that Philadelphia and the medical societies to which he belonged could bestow upon Dr. Stillé were his. He was one of the secretaries of the convention out of which grew the American Medical Association, and for several years was a secretary of the latter body. He was president of the Philadelphia Pathological Society from 1850 to 1863, of the County Medical Society in 1862, of the American Medical Association in 1871, and of the Philadelphia College of Physicians in 1883, and a fellow of many other medical and learned societies. In 1876 an honorary degree of LL.D. was conferred upon him by the Pennsylvania College at Gettysburg.

Dr. Stillé's writings are standard works, and are masterly and scholarly productions. Among the works he contributed to literature are "Humboldt's Life and Character," "War as an Element of Civilization," "Othello and Desdemona;" while those on scientific subjects are voluminous and many. Perhaps the most prodigious work was the "National Dispensatory" (with John M. Maish), a work which has brought the science of pharmacy into definite relationship with that of medicine. His "Therapeutics and Materia Medica" is a well-known standard work, and his "Epidemic Meningitis" and "Epidemic Malignant Cholera" are works of original research that marked an epoch in the science of the nation.

Alfred Stille, M.D., LL.D.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, September 15, 1900.

THE SOUTH AFRICAN HOSPITAL COMMISSION—ARRIVAL OF THE COMMISSIONERS AT CAPE TOWN—PROGRESS OF THE INQUIRY—MR. KENDAL-FRANKS' REPLY TO MR. BURDETT-COUTTS' CHARGES—DEATH FROM SUFFOCATION BY ARTIFICIAL TEETH—THE OUTBREAK OF PLAGUE IN GLASGOW—DISPATCH OF DR. JENKINS OF THE NEW YORK BOARD OF HEALTH AND DR. THOMAS OF THE UNITED STATES MARINE HOSPITAL SERVICE—ELABORATE PRECAUTIONS IN THE PORTS OF THE UNITED KINGDOM.

The South African Hospital Commission arrived at Cape Town on August 24th and at once proceeded to take evidence. Prof. Dunlop of the Glasgow Royal Infirmary, who had given his services in field gratuitously, said that he was at the Wynberg Hospital for six months. There were plentiful supplies but excessive red tape. He thought that the Army Medical Department was not sufficiently advanced in modern surgery and that leave for the purposes of study should be given to Army doctors. The Commissioners inspected the Woodstock Hospital and examined 20 soldiers. They made practically no complaints except as to the lack of orderlies and doctors. Colonel Supple, of the Royal Army Medical Corps, said that 31,305 sick had been treated in the base hospitals at Cape Town and the mortality had been 1.15 per cent. The principal cause of death was pneumonia. Mr. Kendal-Franks of Dublin, one of the consulting surgeons to the forces, who was at Bloemfontein at the period to which Mr. Burdett-Coutts' charges apply and who took part in the march to Johannesburg and thence to Pretoria, has written a very long letter to the *Times* in which he characterizes Mr. Burdett-Coutts' charges as hysterical word-painting and says that, although he has seen unavoidable overcrowding, he has never seen in any hospital anything corresponding to the condition described by that gentleman. As to his insinuations that while the hospital tents were overcrowded many public buildings, which could have been used with advantage, were not, because they were used by staff officers; he points out that as the supply of nurses and doctors was below what was required, it was necessary to house the wounded so that the greatest advantage could be taken of the limited personnel. Each house which would accommodate, say six staff officers, could hardly take more than 16 or 18 patients and would require a couple of nurses and orderlies in addition to a cook and servants. Where were they to come from? Moreover, an enormous amount of extra work would be thrown on the already overworked medical officers. No lack of provision was made for the sick and wounded. The difficulty lay entirely in getting supplies up from the base, especially at Paardberg and on the march to Bloemfontein. The supreme importance of following up Cronje with the greatest rapidity and of hemming him in demanded that everything which would jeopardize the movement should be sacrificed even at the cost of leaving four-fifths of the ambulance wagons. To delay the march so as to provide a full complement of these would have entailed a prolongation of the war which would have cost far more lives and suffering than has been already produced. When Bloemfontein was occupied the army had to depend entirely for its supplies on what it could carry. The railway to the south was in many places in the enemies' hands. Before supplies could be brought up, the Boers had to be driven from these places and the line repaired. Did Mr. Burdett-Coutts realize that to supply sufficient food to the troops was the most humane precaution to prevent the spread of disease, that food for the healthy was more important than beds for the sick?

At Southsea a very peculiar fatality occurred. A gentleman was undressing on the beach preparatory to bathing. There was a very cold wind and the man in shivering with the cold swallowed his artificial teeth which choked him. When picked up he was dead.

The outbreak of plague in Glasgow has caused considerable alarm at all the ports of the United Kingdom. Places as distant as Cork in Ireland have taken the most elaborate precautions and are even preparing special isolation hospitals. All the vessels trading with Glasgow are on arrival inspected by the medical officers of health. Dr. Jenkins, Commissioner of Health of New York, who is taking a holiday in Europe, was stopped in London by cable from his Board and ordered to Glasgow to enquire into the character of the outbreak so that the New York sanitary authorities may decide upon the prudence of closing commercial intercourse with Great Britain. Dr. Thomas of the United States Marine Hospital Service has arrived in Glasgow to watch American ships on the Clyde. The very strictest quarantine is now observed at Gravesend. It appears that the outbreak began at the end of June. A woman died in a flat on a Sunday and was "waked." Her death was not made known to the authorities until the following Thursday when the body was in a state of advanced decomposition. Two women who attended the "wake" contracted plague and died. The Health Committee of Glasgow have decided to set apart the district from the center of which the plague cases were drawn as a well defined area to be placed under sanitary control. All the inhabitants and their dwellings will be under the observation of officials who can enter a house suspected even of having a nuisance. Street cleanliness will be enforced and the houses limewashed and otherwise disinfected. Two extra medical practitioners will be appointed for the specially defined area. An offer will be made to inocu-

late with antiplague serum all the inhabitants who are willing. All the hospital officials and others who come in contact with cases of plague or suspected cases will be inoculated. The outbreak has had a very serious effect on the shipping. The collector of customs has refused to issue clean bills of health to steamers outward bound from Glasgow. Foreign countries, such as Spain and Denmark, have begun to impose quarantine on Glasgow vessels.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fiftieth Annual Meeting, Held at Wilkes-Barre, September 18, 19, and 20, 1900.

First Day—September 18th.

The society was called to order by the president, Dr. Geo. W. Guthrie of Wilkes-Barre, and addresses of welcome were delivered by Hon. F. M. Nichols, mayor of the city of Wilkes-Barre, and Dr. H. M. Neale, of Upper Lehigh, president of the Luzerne County Medical Society. The reports of the officers of the Society and of various committees were then read and the business of the meeting transacted.

Early Diagnosis and Treatment of Tuberculosis.—Dr. Charles Rea of Philadelphia considers that of the early symptoms the short, hacking cough, accompanied by a regular afternoon rise in temperature, is of great significance. Another important sign is the increased pulse-rate, with diminished arterial tension, while gastric disturbances are frequently observed and always to be carefully considered. In obscure cases the past history, hereditary taint, etc., are of much greater value in arriving at a diagnosis than the physical signs, which are often misleading. Of the newer aids the use of tuberculin is never free from the risk of lighting up a latent lesion, and the results of skiagraphy requires such skilled interpretation as to put the method out of the province of the general practitioner. The treatment consists in providing for an abundance of pure air and nitrogenous diet with change of climate, although the discomforts of travel often more than offset its advantages. Of remedial measures the intrapulmonary application of creosote by the nebulizer is most useful.

Antipneumonic Serum.—Dr. Edwin Rosenthal of Philadelphia said that no treatment was to be considered specific for all types of cases. In croupous pneumonia an approach to specific treatment seemed possible. Serum treatment must be begun early if it is to be of any service whatever. The side affected has been chosen for the injections. Twenty cc. of the serum is injected by means of an antitoxin syringe, the aperture being then closed by collodion. The dose can be repeated in from five to six hours. Temperature over 103° F. is an indication for the giving of the treatment. The use of the serum does not interfere with other treatment. (Dr. Rosenthal's paper will appear in full in the Medical News.)

Old-Time Treatment of Typhoid Fever.—By this Dr. W. H. Hartzell of Allentown means the methods in vogue prior to 1875. Three different stages of development may be noted, one up to 1860 when reliance was placed almost entirely on such drugs as digitalis, aconite, potassium iodide, silver nitrate, turpentine, etc., with an average mortality of 27 per cent.; another up to 1866, the period of incomplete antipyresis, with a death-rate of 16 per cent. and, finally, the time of systematic antipyresis lasting until 1875 and showing a mortality of 8 per cent. In the discussion Dr. A. A. Eshner of Philadelphia condemned the tendency of the rigid adherents of the Brand treatment to make hydrotherapy a stereotyped measure to be carried out without variation, regardless of the needs of the individual case. In every instance the procedure should be modified as the patient's condition seems to demand; it is better to get slight drops at short intervals than greater ones less frequently. Dr. Koenig of Pittsburgh advised the giving of large amounts of water, for in cases where the secretion of urine is free the prognosis is always good.

Lecturing Not Teaching.—Dr. T. D. Davis of Pittsburgh advocated a radical change in the present methods of medical instruction. Four years is ample time in which to acquire a medical education, in spite of the large percentage of failures at every State Board examination, but more real teaching should be done. The average college lecturer is very far from being a pedagog, and furthermore the disparities in the mental equipment of the students making up his audience are so great that no lecture in the first year can fully benefit all of them. During the first two years of college the work should all be done in recitations or quizzes and the minds of the students would then be sufficiently trained to hear lectures with profit.

The Human Temperaments.—Dr. J. C. Bateson of Scranton discussed the significance of the different psychological types in the practice of medicine. A true appreciation of the needs of the body can be arrived at only by a study of its relation to mental states and a knowledge of temperament as that of physiology.

Nervous and Electrical Energy.—Dr. J. Emmet O'Brien believes that nervous energy is the same as electrical energy and showed the relationship existing between the nervous mechanism and many forms of electrical machinery. Nerves are constructed like electric cables. They are insulated, distributed and arranged like fine electric conductors. Their purpose and use are the same as the purpose and use of electric conductors, namely, communication from point to point. They convey some form of force because: Electricity is always present when they act. Be-

cause it is the form of force that would do the work required. Because it is the form of force that would work with such construction. Because the terminal and central mechanisms connected with the nerves correspond to the terminal and central mechanisms connected with electric systems of communication and do similar work in sending, receiving, relaying, switching, transforming, accumulating, retarding, discharging, concentrating, distributing and translating impressions. Finally, because electricity is the only form of force that we know of that would do all the work required, with such construction of conductors and of terminal mechanisms. He concludes that nerve-force is electricity; that it is produced in the nervous system by chemical processes analogous to those which produce heat in the general tissues, *i. e.*, oxidation; and that it would advance knowledge of the nervous system and its functions to acknowledge this proposition, at least a working hypothesis.

Meningitis Complicating Pneumonia.—Dr. T. C. Ely of Philadelphia reported a case of recovery from this usually fatal combination. The patient was a boy of six years whose pneumonia was at first croupous and then became lobar. The meningeal symptoms set in on the twenty-third day and pneumococci, streptococci and staphylococci were found present.

Raynaud's Disease.—Dr. Judson Daland of Philadelphia presented the clinical history of a case of this disease. The patient was a woman of forty-three years who had had her hands and feet frozen twenty-one years previously and when seen was suffering in her fingers, toes and face. Under six months of massage and bathing her condition had improved somewhat. The urine had contained sugar for a period of three weeks with an excess of indican and an occasional trace of acetone but never any albumin.

The Diagnosis of Ectopic Gestation.—Dr. J. M. Baldy of Philadelphia reported a case for the purpose of calling attention to the absence of a sign usually considered diagnostic. The patient missed a menstruation in June and suffered from severe abdominal pains during July, August and September. At this time she was operated on and found to have a tubal pregnancy about three months old. At no time was there any vaginal or uterine bleeding, which shows that cases do exist in which the uterus makes no effort to throw off the decidua.

SECOND DAY—SEPTEMBER 19TH.

Fracture of the Spine.—This was the title of the address in surgery read by Dr. Walter Lathrop of Hazleton. In the mining regions such fractures are very common. The dorsolumbar region is most often involved. Paralysis below the seat of the injury with pains radiating or circumscribed are the most prominent symptoms. Laminectomy was recommended highly. Infection is the greatest danger. After-treatment of the oozing is very important. He described a number of patients operated on, all with partial success.

Symposium on Typhoid Fever.—"History and Statistics" was the title of a paper by Dr. J. M. Anders of Philadelphia read by Dr. Taylor of Wilkes-Barre in the absence of the writer. As late as the beginning of the present century typhoid and typhus were still undifferentiated and no distinction between the two was made, some abnormal forms of the disease being recognized, but considered simply as aberrant types. It was Louis of Paris who in 1829 first resolved the complex clinical picture into its two components and his American pupils, Gerhardt of Philadelphia and Jas. Jackson, Sr., of Boston, further developed the subject in this country. In England the old teaching prevailed until 1849 when Dr. Wm. Jenner advocated the recognition of typhoid as a separate entity, and a little later this view met with universal acceptance all over Europe. The most noteworthy feature of the disease as observed in recent years has been the persistence with which it attacks large bodies of men aggregated under poor sanitary conditions, as in military camps. In all the late wars it has been a prominent factor in raising the death-rate and the conditions of camp-life appear to be such that the outbreak of epidemics is inevitable. During the Spanish-American war it developed apparently spontaneously regardless of climate or locality and often without being preceded by dysentery. In the one encampment at Chickamauga over 9,000 cases came under treatment with a mortality of 7.13.

Etiology.—Dr. Chas. H. Miner of Wilkes-Barre described the biological and morphological characteristics of the typhoid bacillus and discussed the various means by which the infection is conveyed. Of these contaminated water is the most frequent, milk also often conveys the disease, usually through the washing of cans with impure water. Oysters fattened in fresh water may perform a like office and flies after crawling over the contents of latrines may infect food or convey the bacillus directly. Personal contact apparently does not carry danger with it, except under such conditions as prevail in military encampments where through the enforced close association and lack of conveniences the chances of infection are very much greater.

Complications and Sequelae.—Dr. H. A. Hare of Philadelphia drew attention to the fact that the typhoid of to-day is markedly different from that of former years. Text-book descriptions give the picture of a typical case, but in everyday practice one meets with very unusual forms. In its onset the disease is often acute rather than slow and constipation is commoner than diarrhea. The temperature-curve, instead of being the classic step-like ascent, often goes up with a rush and chills and fever simulating a malarial infection may be present. The cases in which the onset is sudden and overwhelming do not necessarily justify a bad prognosis, but are more often those in which active systemic antagonism

to the poison is going on and are likely to end in quick and uncomplicated recovery. In mild cases the invasion may be very gradual and the constitutional disturbance slight, so that errors in diagnosis frequently occur. The most common mistake is to take typhoid for gastroenteric fever which happens especially often in children who are not at all exempt, the common idea to the contrary notwithstanding. Instead of running its usual three- or four-week course, abortive forms are frequent in which convalescence begins in ten days or two weeks. All of these considerations show definitely that the disease is undergoing very decided alterations in its nature. In England the health reports of London, Manchester and other large cities show a constant decrease in the virulence of the disease and this same fact is very strikingly shown by the statistics of the last decade in Philadelphia and New York. Here a progressive diminution in morbidity and mortality was observed until the time of the Spanish-American war, when there was an enormous increase in frequency but an actual drop in the death-rate. This can mean only a very remarkable alteration in the nature of the disease, either a greatly decreased virulence or a rise in the resisting power of the organism to the typhoid toxin.

Treatment of Typhoid.—Dr. Alfred Stengel of Philadelphia said that we are forced to admit that we have no specific remedy at our command for the cure of typhoid. Hence our treatment has to be mainly directed toward supporting the patient and avoiding complications. In order to accomplish this it is of importance to supply a sufficiency of nourishment and in regard to feeding views are undergoing radical changes. Hydrotherapy intelligently applied is the most valuable form of treatment, but it is necessary to avoid its rigid application without regard to individual needs. Not every case needs it or is benefited by it and, especially in private practice, it has often to be omitted. Wherever the aversion of the patient is very great or the suffering produced by the tubbing is severe, it is better to do without it. The objections of friends, much shivering or nervousness and the hysterical and nervous outbreaks which sometimes occur also contraindicate it. Peritonitis and hemorrhage are complications that debar tubbing. The temperature of the water is to be regulated entirely by the way the patient stands the bath and the condition of his circulation before and after. Usually it is well to have it between 80° and 90° F. The tubs should come once in 3 hours if the temperature goes above 102.4° F.; if below this point but still above 101° F. sponging is indicated. The idea that if the temperature is below 102° F. it is not necessary to do anything in the way of hydrotherapy is fallacious, for, although the antipyresis produced is of undoubted value, many other advantages accrue from its use and some of the more mild and less troublesome forms should be resorted to. The length of time each bath is to be continued should be governed by the same considerations as the temperature and frequency and should be varied in each case according to individual conditions. Cardiac stimulants are always required, and of these the bath is the most potent and satisfactory. In addition alcohol may be required, but the prevalent tendency to the administration of large doses is to be strongly deprecated. Small doses, two drams, of brandy or whisky should be given, and if moderate quantities do not suffice no good is to be attained by the use of large amounts. Strychnine is a valuable adjuvant to the alcohol and may be advantageously used with it in alternate doses. In extreme cases camphor is without an equal and may be given hypodermatically in doses of one grain dissolved in fifteen minims of olive oil. Intestinal antisepsis limits the frequency of complications; silver nitrate may be given combined with opium if there is diarrhea and with belladonna or nux vomica if constipation is present.

Medical Laws of Pennsylvania.—Dr. W. H. Dudley of Easton read this paper. He said: The honest physician obeys the law; graduates in due and proper form; goes before the State Board of Medical Examiners, and either passes or fails to pass, and tries again; all of which he does at a considerable expenditure of time and cash. In looking back over the past few years, since our present medical law has been upon the statute books, there appears—at least in our section of the State—to be a growing disregard for it. For, although at first it did seem to have a certain amount of restraining influence upon the illegal doctor, that influence appears to be growing slowly, though nevertheless surely less and less. In the discussion Dr. Chas. McIntire of Easton said that the weak points of the present system lie in the facts that there are no official records of those entitled to practise medicine and that there is no official body to prosecute infringers.

Some Medico-Legal Cases.—Dr. T. M. T. McKennan of Pittsburgh divides the cases in which suits are brought into three classes: (1) Those in which there is severe primary injury, *e. g.*, fractures; (2) those in which an apparently slight injury is after some lapse of time followed by nervous symptoms, *i. e.*, traumatic neurasthenia; (3) those in which the injury is slight or there is none at all and the symptoms are exaggerated or entirely assumed. In illustration of the first class five case-histories were given in which recovery followed within two years after a pecuniary award for incurable injury had been made. Out of eleven cases of the second class a large part recovered or improved greatly inside of two years. In these cases the damage is mainly psychical and the element of actual trauma is but slight. The third class, that of malingerers, is easy to detect and recovers speedily after the pecuniary remedy. In the discussion Dr. Judson Daland of Philadelphia related a case of undoubted traumatic hysteria which persisted eight years after a judgment of $10,000

had been obtained. Dr. M. Price of Philadelphia urged the necessity of great care in giving medical testimony in cases of this sort in which the results often entirely refute the prognosis of the expert and bring the profession into disrepute. Dr. Weaver of Wilkes-Barre said that a neurosis is by no means the natural sequence of severe trauma, a study of 14,000 railroad employees who were seriously injured, but, of course, not able to claim damages, showed only eight instances of this disorder, while of the passengers injured on the same road over twenty per cent. were affected. Drs. Gibbons of Scranton, Davis of Pittsburgh, Pearce of Philadelphia and Bailey of Pittsburgh all considered the question of medical expert testimony and advised great caution on the part of the physician when summoned for this purpose. Dr. A. A. Eshner of Philadelphia said that the effect of suggestion might explain some of the cures of nervous troubles soon after an award of damages. Dr. McKennan closed the discussion by saying that the object of his paper was to show the existence of a definite class of cases to be grouped as traumatic neuroses and caused by psychical rather than physical trauma.

Remedies in Phthisis.—Dr. T. J. Mays of Philadelphia believes that pulmonary tuberculosis is essentially a disease of exhaustion which advances and recedes with the patient's strength, so that rest is of the greatest value in the treatment. The second factor is food, nutritious and easily digestible, given in small amounts at frequent intervals. The possibility of supplementing mouth-feeding by the rectal administration of food should not be forgotten. Fresh blood and suppositories of scraped beef are well absorbed by this route. Strychnine in small doses raises the tone of the nervous system and is of service. Hypodermatic injection of silver nitrate over the course of the vagus nerves in the neck stimulates these by counterirritation and affects the disease favorably. A few minims of cocaine solution are injected and then through the same syringe five minims of a two-and-a-half-per-cent. solution of silver nitrate are thrown in. Dr. S. Solis Cohen of Philadelphia in discussing the paper said that it is very advantageous to give the strychnine in doses of 1/120-1/150 every hour, as by this means the system is constantly under its influence. Red meats have the most food value; the stomach should be flushed with hot water an hour before meals. Open air night and day is to be advised wherever feasible, even for bedridden patients.

Treatment of Appendicitis.—Dr. M. Price of Philadelphia said that all cases of appendicitis are laws unto themselves and that generalizations as to what to do for appendicitis are futile. Pus can never be removed by medicines and pus cases invariably require operative treatment. Operations on patients who are practically moribund are mistakes. The great mortality lies in just this direction and comparisons between different operators are of little value, as a rule, because of the various points of view assumed by the different operators. After-treatment also has to be borne in mind in the interpretation of results. Dr. R. H. Gibbon of Scranton in discussion said that the curse of surgical treatment is the necessity for drainage, a condition often brought about by waiting too long. The first hint that pus is coming should determine immediate operation. Dr. G. G. Davis of Philadelphia said that there is no question that a great eagerness for operating was deplorable. In straight cases there can be no question as to the advisability of operation, but in cases of uncertain diagnosis great caution should be exercised. Ileocolitis is the greatest factor in mistaken diagnoses. Dr. J. M. Baldy of Philadelphia, commenting on the question of the removal of healthy appendices, said that there are numerous patients with persistent trouble who recover absolutely on removal of the appendix and yet not a trace of lesion has been found in the appendix. In such cases the results are more valuable than the record of pathologic alterations. Drainage is to be avoided. Nine cases out of ten requiring drainage develop pus. One should not search more than fifteen minutes for an appendix. Break up adhesions if necessary.

Puerperal Infection.—Dr. C. P. Noble of Philadelphia gave the address on obstetrics, taking as his main theme the prevention of puerperal sepsis. Early generalizations regarding methods of uterine disinfection were too broad. Conservative methods are now more in vogue. Better methods of treatment employed in the cities have brought about a much lowered mortality. There is too great mortality in general country practice and this is indicative of the fact that the rank and file of physicians are not practising antiseptic midwifery. The most important item in good obstetrical work is cleanliness of the hands. He cleans the external genitals, the hands, the hands of the nurse and the instruments, by the most rigorous methods. Intra-uterine douching is held to be a bad procedure. It fails to disinfect and interferes with natural methods of self-protection. Cæsarean section was also discussed by Dr. Noble. He said that the rights of the unborn child are to be taken more into consideration and since this operation had proven less and less fatal under good technic, it is to be more and more relied upon in approximate cases. European statistics are much better than ours, since here the operation is performed generally as a last resort. Careful mensuration of the woman's pelvis and of the child before labor would save many lives.

Prophylaxis in Gynecology.—This was also dwelt upon in the address. Careful attention should be paid to (1) development of the organs of patient; (2) to childbirth accidents; (3) to infections and (4) to tumors. In the first place many obscure neurotic patients have faultily developed generative organs. Infantile cervices are impor-

tant factors. Childbirth accidents, lacerations, etc., should be repaired at once. The most important infection is gonorrhea. Here instruction is an important item, as few of the laity realize the far-reaching importance of this apparently simple disease. In the matter of removal of tumors, conservative surgery is gaining ground yearly. Myomectomies are preferable to hysterectomies and the removal of healthy ovaries for the cure of nervous disease is a reprehensible procedure.

Appendicitis in Child.—Dr. Guthrie of Wilkes-Barre then showed a child of two years who had been operated on for appendicitis. The result was excellent.

Applied Anatomy Teaching.—Dr. G. G. Davis of Philadelphia advocated the more extensive teaching of applied anatomy in our medical schools. Descriptive anatomy, while being the foundation of all medical works, is too much taught and its practical applications in surgery neglected. The tendencies of modern teaching are to practical methods. The teaching of anatomy should keep abreast of the times. Dr. Beattie of Philadelphia heartily endorsed the ideas of Dr. Davis and gave his experiences with the applicants for State Board examinations. Medical reciprocity will become an established fact as soon as there is a systematization of the courses in the curricula.

Surgery of Gall-Bladder.—Dr. O. C. Gaub of Pittsburgh read a paper on this subject, considering only those cases in which there is patency of the hepatic and common ducts. He believes in the infectious origin of gall-stones in which connection cholelithiasis following typhoid is an interesting sequence. Hepatic colic is a result, not of the passage of a gall-stone, but of the cholecystitis. One attack of colic disposes to others. He advocated the operation of cholecystectomy as the best, because the diseased organ is removed, convalescence is shorter and there is not any greater mortality. The indications for operation are hydrops, empyema, chronic inflammation and carcinoma.

Removable Buried Suture.—Dr. Evan O'Neil Kane of Kane then described an ingenious method of using a buried deep silver suture which can be readily removed.

Tuberculosis of Bladder.—Dr. F. P. Ball said that, although this disease is comparatively rare, its early recognition is so important that any differential diagnostic features are of interest. Pain in the rectum and in the middle of the penis was present in a case reported. There also was pain when the bladder was full rather than when it was empty. Dr. Noble in discussion said that both the diagnosis and treatment of this condition are simpler in women than in men, since cystoscopy is so much easier. Patients can be cured when the disease is not too extensive by the local application of silver nitrate. This is best applied through Kelly's cystoscope, thorough canterization being followed by after-washing with salt solution. Vesicovaginal fistulæ, with steady applications of silver and thorough drainage, also cure at times. Excision is to be recommended in severe grades of the disease. Dr. Baldy said that the finding of the bacillus is necessary to confirm the diagnosis; without such confirmation he would hesitate to say that he had cured a tuberculous ulcer of the bladder by any other method than that of entire excision. The early use of the cystoscope should be more extensively practised.

Silver Nitrate in Dermatology.—Dr. J. C. Dunn of Pittsburgh has found that silver nitrate in solution, grs. v-℥i, and locally applied is an excellent stimulant in eczema, all forms of which, as well as psoriasis, yielding to this application. It is well to apply chrysarobin and salicylic acid to one side of the body and the silver nitrate to the other and after a week let the patient decide which he likes best and desires to continue. Other diseases cured by this application are erythema, acne, herpes zoster, impetigo, lichen planus, and apparently a beginning epithelioma. In inflammatory or parasitic skin diseases no other drug is so good as silver nitrate, which seems to have an alterative effect on the nutrition of the skin.

Constipation or Obstipation.—Dr. William M. Beach of Pittsburgh under this heading describes the operation of valvotomy which is nearly always curative in its effect. Either one or more of the rectal valves may be removed, the operation being done through a four-inch protoscope. The valve is first sprayed with cocaine solution and then a solution of suprarenal extract is applied. It is then put on the stretch by the insertion of a tenaculum at either end and the desired part removed with a small curved knife. Gunshot sutures are applied and a firm tampon inserted. The dangers are from the bleeding, which is usually very free but may be greatly diminished by the use of the adrenal extract, and from peritonitis following a chance cut through the rectal wall into the peritoneal cavity.

Roentgen Method.—Dr. Chas. Leonard of Philadelphia considers skiagraphy one of the most valuable adjuncts to the ordinary means of diagnosis, but skill is needed in order to profit fully by it or even to interpret accurately its meanings. The Röntgen-ray operator requires the broadest sort of knowledge; he must be a thorough anatomist, a skilful clinician, and, in order to master the difficult technic, must have had wide electrical and mechanical training. The findings of the X-rays are absolutely accurate because founded on physical laws, and errors that arise are due solely to faulty interpretation. In general the surgical applicability of the rays lies in the location of foreign bodies in the tissues, the detection and control of fractures, in determining the nature and extent of orthopedic conditions, in diagnosticating new growths, and, finally, in differentiating calculi in the uropoietic system. In the trunk and head difficulties still

exist and although fractures may be detected it is not always possible to exclude them. It is especially in the case of compound fractures that the rays are of practical value, for extensive exploration of the wound may be dispensed with and the patient be spared pain and the vitality of the tissues not further jeopardized. In cases of suspected renal, ureteral or vesical calculus an absolute diagnosis may be made and the stone positively detected or excluded. In 90 cases subjected to this test a stone was present in only 20; of these the smallest weighed 9/10 of a grain and the largest one was two inches in length. In the discussion Dr. Culp asked whether small calculi, especially those of uric acid, could not easily be overlooked. Dr. Leonard said that in his experience there was no such risk and referred to the smaller stone above mentioned which was a uric acid calculus. In doing work on the kidneys it is essential to use a low-tension tube.

Paralysis Agitans Without Tremor.—Dr. A. A. Eshner of Philadelphia called attention to the fact that many diseases receive their designation from symptoms supposed to be characteristic but which in reality are not constant. Thus we sometimes see typhoid fever without either the typhoid state or fever, smallpox without the exanthem, exophthalmic goiter without protrusion of the eye balls or tumor of the thyroid and paralysis agitans without the tremor or the typical pill-rolling, pen-holding or wool-spinning movements. In such cases the diagnosis must rest on other signs, *viz.*, the expressionless face, the subjective feeling of heat, sweating, restlessness necessitating frequent change of posture, the festinating gait and absence of mental symptoms other than the loss of memory sometimes observed.

Tuberculous Adenitis.—Dr. L. J. Hammond of Philadelphia divides the treatment of tuberculous glands into two forms, constitutional and surgical. Under the first heading fresh air, sunlight and exercise, combined with abundance of pure food, are of the greatest importance. Of the drugs to be used the most suitable are strychnine, quinine, iron, potassium salts and cod-liver oil, the latter being best applied by inunction. Surgically the disease is to be treated in three stages, the glands, the abscess and the sinus. The glands, if small and in the early stages, may yield to medical treatment and inunction with iodoform or the injection of a twenty-five-per-cent. solution of glycerole of iodoform. If this is not successful, or if there is a tendency to softening, they should be removed by dissection, avoiding breaking the capsule if possible. If abscess-formation has already taken place incise and evacuate and then irrigate with 1/1000 bichloride solution. The incision should be a free one and thorough curettage of the granulation-tissue done. Primary union may sometimes be secured by omitting packing and bringing the parts together at once and applying an immobilizing dressing. Sinuses should be excised and their edges curetted.

Dr. J. A. Ehler of Lancaster exhibited and presented to the Society a portrait of Dr. J. L. Atlee, who in 1848 did the first ovariotomy performed in the State, together with a pamphlet by the operator describing the operation.

Third Day—September 20th.

Hygiene.—The address in hygiene was delivered by Dr. Joseph T. Rothrock of West Chester, State Commissioner in Forestry. He said that it was not an impossibility for the State supply of water to fail, and he insisted on the important relations existing between forests and water supplies. With reference to the question of tuberculosis he pointed out the inconsistency of not permitting tuberculous cattle to be imported into the State and yet no provisions were made against the entrance of tuberculous human beings. The State forest reservations were spoken of as ideal places for the tuberculous and he advocated them as proper resorts for State hospitals.

Bacterial Purification of Sewage.—Dr. D. H. Bergey of Philadelphia described briefly the two systems of sewage-disposal which at present seem to give most satisfactory results, *viz.*, the separate-tank system and the contact system. The technical difficulties in the way of maintaining sand filter-beds in satisfactory operation are so great that other means had to be looked for and these two seem to answer the requirements. In the first the sewage is kept for sometime in a large air-tight tank where the liquefying bacteria dispose of a large amount of the organic matter and from here it is passed onto filter-beds in which the nitrifying bacteria complete the work. In the contact system two open tanks are employed each containing from three to six feet of coke or clay. After being kept in the first of these for from one to two hours the sewage is discharged into the second from which the effluent emerges with seventy-seven to eighty-three per cent. of its organic matter converted. Either of these two processes is more efficient and practical than any filtration method. Dr. R. H. Gibbons of Scranton said that Pittston had suffered greatly from epidemics of typhoid until its water supply was changed and no longer contaminated by the sewage of Scranton. Dr. G. W. Guthrie of Wilkes-Barre cited Atlantic City, N. J., as having admirable sanitary arrangements inasmuch as the sewage is disposed of by sand contact-beds two miles inland and the water supply is derived largely from artesian wells. In closing the discussion Dr. Bergey said that the installation at Atlantic City was not a true contact system and not wholly satisfactory.

Higher Physiology.—Dr. E. N. Ritter of Williamsport made a plea for the same care and judgment in breeding and bringing up members of the human race as is exercised in the management of cultivated plants and the domestic animals. Vast numbers of persons who are physically and mentally unfit enter the married

state, conception takes place under adverse conditions, the hygiene of pregnancy is not observed and the result is that prisons and hospitals are full of individuals bodily and morally tainted from birth. Maternal impressions are of the highest importance in laying the foundation for a fine mental constitution and the best time to mold character is before birth. Another important problem consists in the sexual education of the young which, if properly done, never leads to harm. Dr. Bates congratulated the speaker on her bravery in taking up this topic and referred to recent attempts in Ohio to make medical examination of the contracting parties a legal preliminary to the granting of the marriage license. Dr. Massey considered that the education of women in regard to the functions of maternity was too much neglected and that it was especially the woman physician who could remedy the deficiency. Women should be warned of the dangers of marrying unexamined men, things tending to produce dangerous maternal impressions, such as some gaudy advertisements and posters should be removed from the streets and young people about to marry should be fully instructed as to the responsibilities involved in the bringing forth of children. Dr. Myers of Huntington cited the case of a couple in New York from whom a race of 200 criminals had sprung. In prisons and penitentiaries the inmates with acquired criminal tendencies should be kept separate from congenital malefactors and the latter castrated. Further comments were made by Drs. Gibbons and Koenig followed by Dr. Bishop who said that the idea of maternal impressions influencing the character of the fetus was a fallacy and that prematrimonial examination was degrading and not to be tolerated.

Sanitary Milk for Children.—Dr. B. H. Detwiler of Williamsport reported on an experiment he is conducting with the view of producing a sanitary milk for children. The milk of cows periodically undergoing sexual excitement is irritating and often produces intestinal derangements in infants. It has been proposed by French authors to obtain a milk not subject to changes of this sort by spaying the cows, which continue to give milk for five or six years and then may be killed for beef. In the experiment made by the reader two cows had been spayed by the vaginal route a year ago with apparently satisfactory results, as far as milk production was concerned, although a longer time must elapse before definite conclusions can be drawn. Dr. D. H. Bergey of Philadelphia said that the chief danger in infants' milk is in the bacteria it contained, streptococci being especially apt to produce gastrointestinal disorders and that it would be interesting to see whether the operation proposed would affect this factor also or not. Dr. Alfred Stengel of Philadelphia said that improvement in the quality of the milk is to be reached only by changes in the existing dairy conditions. The milk richest in cream is not necessarily the best for infant feeding, for example, the Channel-island cow's milk is greatly valued for its high percentage of butter fat but is quite unsuitable for the rearing of babies. Dr. Detwiler closed the discussion by saying that certain of the inmates of the Danville Asylum who were fed almost exclusively on milk were subject to epidemics of digestive disorders which apparently could be due only to changes in the composition of the milk.

Cataphoric Treatment of Cancer.—Dr. G. B. Massey of Philadelphia stated that the object of this treatment was to deposit mercury in the nascent state in the growth and so to produce an area of complete necrosis and a surrounding zone of sterilization. This is accomplished by the use of a hollow gold positive electrode through which metallic mercury may be forced into the growth, the negative pole being a lead plate applied to the patient's back. Since 1893 he has treated 37 cases by this method with 10 cures, 3 doubtful results and 24 failures. Dr. G. E. Shoemaker of Philadelphia said that in this as in all methods intended to act by cauterization distant unrecognized foci could not be reached, and that there was no reason to suppose that diseased tissue could be differentiated from healthy by the process. Dr. Massey replied that the effect produced is not only a cauterization but that the mercury infiltrated the surrounding parts also.

Nausea and Vomiting of Pregnancy.—Dr. John M. Batten of Downingtown in his paper brought out the intimate interrelationship between heart, stomach and uterus. During pregnancy the pressure of the growing child stimulates the uterus and in turn the other organs are sympathetically deranged. The one cure for obstinate vomiting under these conditions lies in constant feeding, whenever awake during the night food should be taken, a substantial meal should be made before rising and three others should follow during the day.

Paroxysmal Delirium.—Dr. W. C. Hollopeter of Philadelphia called attention to the growing belief in autointoxication as the etiological factor in many pathological states and cited three cases of sudden cerebral disturbance apparently due to the absorption of septic products from the intestine. The patients were all children and after a longer or shorter duration of the mental symptoms, fever and prostration promptly recovered under copious colonic flushing and intestinal disinfection. Dr. Judson Daland of Philadelphia observed that the presence of large amounts of indican and acetone in the urine points strongly to this form of poisoning and that no doubt other similar substances are to be found, although we do not as yet possess the reactions to demonstrate their presence. Dr. Savery Pearce described a somewhat similar case in which mild delirium slowly developing with low fever in a child promptly responded to high injections and the wet pack.

Nephritis in Gynecological Practice.—Dr. George E. Shoemaker reviewed the predisposing causes to this affection especially associated with disease of the female pelvic viscera. The general conditions of pregnancy favor the development of kidney trouble, for example, the sagging of the anterior vaginal wall induces a secondary sacculation of the bladder leading to difficulty in emptying it and decomposition of the urine which explains many cases of nephritis. Gonorrhea, sitting on the cold or damp ground, catheter cystitis, chronic pelvic inflammations, the wearing of thin-soled shoes and unsuitable underwear in winter, all may induce the disease. Ether anesthesia may light up a latent nephritis and atypical uremic symptoms after operation may simulate sepsis. If a major operation is imperatively called for the presence of nephritis does not contraindicate its performance, but greater caution and watchfulness are necessary.

Chronic Myocarditis.—Dr. John H. Musser of Philadelphia stated that the importance of this disease is rather greater than generally supposed and that valvular disease with a healthy heart muscle is not as serious as it is often considered. The symptoms of myocarditis are usually blended with those of concomitant lesions and the affection depends to a large extent on the same etiological moments as these. In general it may be divided into that secondary to pericarditis, following valvular disease, toxic myocarditis and fibrinous myocarditis or coronary-artery disease. This latter form usually accompanies general senility with a universal dulling of the sensibilities so that many of the typical symptoms are absent. In middle life, however, pain and dyspnea together with the Stokes-Adams syndrome of dyspnea, coma and slow pulse are frequently observed. Of the objective signs the peculiar sallow pallor with a prematurely old and wrinkled facies is very typical. On physical examination degenerated arteries and high tension are commonly found while in addition to the signs peculiar to myocarditis there may be those of either dilation or hypertrophy. Reduplication of the first sound is frequent and may be limited to the right or the left heart or be audible all over. Clinically the disease may occur either alone or with pulmonary, cardiac, cerebral or renal symptoms predominating.

Ovarian Hydrocele.—Dr. Reed Burns of Scranton described three cases of this condition which seemed to be due to an unusually deep ovarian fossa, retroflexion of the uterus and local plastic peritonitis.

Do We Resort Too Frequently to Surgical Operations?—Dr. R. H. Gibbons of Scranton considered some of the many conditions where operative treatment gave the only hope for the patient and concluded that the reproach that the surgeon was overzealous with the scalpel was not well founded.

Ophthalmology.—The annual address was delivered by Dr. Charles McIntire of Easton who drew a parallel between the advance of our modern social conditions and the growth of ophthalmological nomenclature. It is surprising how large a portion of the oculist's technical vocabulary consists of words beginning with *a* and in most instances it is the prefix of negation, the alpha privative. At the beginning of the century it was not so, amaurosis was the only word of this class and in this the initial letter is not a prefix, special knowledge was still in its infancy and instruments of precision were lacking; to an age without the ophthalmoscope things seemed simple and superficial because the ability to look below the surface was wanting. And in a similar way the conditions of life were less complex and existence seemed simpler because its possibilities were still in an undeveloped stage. But little by little the understanding broadened, the old-fashioned amaurosis became the *a*-metropia of Donders and the alpha privative began to make itself felt. And now asthenopia has come and with it countless other terms each negativing a function and typifying the conditions of our modern life where the alpha privative is constantly asserting itself, and telling of weakened organs and vital processes improperly performed. In this way the science of life and the science of the eye have gone hand in hand for a century, and as we look to the future we can only wonder what changes will come during the next hundred years and whether at their end the alpha privative will still be in the ascendant.

Electro-Magnet in Eye Surgery.—Dr. E. B. Heckel of Pittsburgh described a special form of electro-magnet possessing many advantages over those in common use. Among there are cheapness, lightness, ease of manipulation, a core of soft steel which requires an appreciable length of time to acquire its full power when the current is turned on, so that the pull exerted is less sudden, the ease with which the core may be removed for sterilization and the special form of tapering point which carries a maximum of magnetic force to the very end. In the use of electro-magnets in removing foreign bodies from perforating wounds of the eyeball it is important not to turn on the current until the point is in position and all adjustments have been made. Additional incisions into the chambers are not justifiable. Dr. J. E. Willets of Pittsburgh discussed the instrument and stated that it fulfilled every requirement perfectly. While it is not as powerful as are some that have been recommended great force is a danger rather than an advantage and the Heckel magnet is entirely satisfactory. Dr. L. H. Taylor of Wilkes-Barre described a case of foreign body imbedded in the retina which was sent to Dr. Hermann Knapp for treatment. The very powerful Haub magnet was used in this case, but the object was not dislodged. The next day it had disappeared from the ophthalmoscopic field and the patient was discharged under the supposition that it had slipped entirely through the posterior wall and

was out of harm's way. The event has apparently justified this view for the patient has almost entirely recovered the sight of the injured eye and experiences no discomfort.

Oculist and Optician; Physician and Public.—Dr. P. J. Kress stated that the public should be educated to recognize the difference between the oculist and the optician, which latter is usually little better than a quack. The proper fitting of glasses, like every other special branch of medical knowledge, requires a broad general training and cannot be properly performed by one bred only to the selling of spectacle-frames.

Dr. Charles H. Miner of Wilkes-Barre presented two cases of leukemia and pseudo-leukemia, showing the typical features of these diseases.

Surgery of Ear.—Dr. J. E. Willetts of Pittsburgh described an operation which consisted in removal of the tympanum and the ossicles with opening up of the mastoid cells if needed. If the discharge at any time seems to be greater than is accounted for by the disease of the middle ear, involvement of the mastoid should be suspected.

Climatology of Neurasthenia.—Dr. F. Savery Pearce of Philadelphia made a plea for greater exactitude in our knowledge of meteorological therapeutics and more definiteness in our directions to patients whom we are sending away. Neurasthenia is a malnutritional malady of the central nervous system and especially amenable to climatological treatment during convalescence. Damp, low, treeless regions are unsuitable, as are also high altitudes where the pressure is low. Altitudes below 2000 feet are usually to be recommended; whether sea air or mountain air depends largely on conditions of pressure, flora and idiosyncrasy. Localities where storms prevail are to be avoided. On this continent Nova Scotia, New Brunswick, Muskoka and the Ontario regions are to be especially recommended. Sea voyages make an excellent prelude to the longer stay in the selected locality.

Removal of Third Tonsil.—Dr. L. J. Lautenbach of Philadelphia described the operation as performed by him without anesthesia or instruments. The use of chloroform or ether in these cases is especially hazardous on account of the depraved general condition of the patients and many published and unpublished deaths have occurred from this cause. Instrumental operation no matter in what form done is always incomplete because it is impossible to feel whether all the tissue has been removed and therefore recurrence is common. Dr. Lautenbach's method is to curette the postnasal space with the fingernail, the artificial fingernail devised by him being employed if the growths are very resistant. Performed in this way the operation is quick, lasting only from ten to twenty seconds, is safe, easy, thorough, is done in one sitting, requires no instruments, causes no pain, shock or fright, and is entirely free from risk.

Animal Organisms in the Ear.—Dr. F. R. Packard of Philadelphia presented a résumé of the cases in the literature in which living animal organisms were removed from the external ear.

Typhoid.—Dr. James Fulton of New London read this paper, which considered in detail many interesting features of this disease.

Esophageal Stricture.—Dr. Charles H. Frazier's patient presented an impassible cicatricial stricture of the lower esophagus for which a gastrotomy with attempt at retrograde dilatation seemed the only remedy. As a last resort a series of silver balls, from two to seven millimeters in diameter and perforated to receive a thread, was procured. The patient was given the smallest of these fastened to a silk thread and directed to swallow it. After a number of hours it passed the stricture, was withdrawn and a larger size introduced. In this way the stenosis was gradually dilated till bougies could be introduced and a cure finally effected by dilatation.

REVIEWS.

Transactions of the American Microscopical Society. Vol. XXI. Edited by the Secretary, Twenty-second Annual Meeting. Lincoln, Neb., 1900.

The *renaissance* of the American Microscopical Society is evidenced by this as well as by the volumes of Transactions of the past few years. From a mildly inefficient collection of amateur microscopists, publishing a few scattering contributions to popular science, the society has grown to represent an important body of scientific workers in the biological sciences and the Transactions offer monographs of actual merit. Interesting the Transactions always have been; they now present something more permanently useful to microscopical science. Of the papers more particularly bearing on medical science those by the President, Dr. W. Krauss, on "Medico-Legal Aspects of Trauma and Diseased Cerebral Arteries;" "Diabetic Blood Reactions," by V. A. Latham; "Chlamydomonas and its Effects on Water-Supplies," by G. C. Whipple; "Eyes of the Blind Vertebrates of North America and Some Laboratory Apparatus," by S. H. Gage, are the more interesting. Botanical and zoological contributions are numerous.

The Cell in Development and Inheritance. By Edmund B. Wilson, Ph.D., Professor of Zoology, Columbia University. Second Edition Revised and Enlarged. The Macmillan Company: New York and London. $3.50.

We have had occasion in a former issue of the Medical News to express the opinion that we believe this work to be the finest on its subject that has ever appeared. We do not except the works of Hertwig nor of Henneguey.

The present edition has been more than re-

vised. A careful reading shows that it has been rewritten and in its new form lays even greater claim to the high place accorded it. While for the general medical practitioner this work will be found to contain little that is of direct practical benefit, either in the diagnosis of disease or in the treatment of the same, for those inclined to ponder on the problems afforded by the study of the physiology and pathology of function no better guide can be found for a fundamental knowledge of the questions of cell-life. The careful and systematic mode of presentation argues well for the literary as well as technical skill of the author. He grasps the sense of perspective, subordinating many details to the general plan.

For those who would keep abreast of the advances in cell-biology the work is indispensable, and for those who take but a quasi-interest in the problems here considered we would predict an intellectual treat.

A Manual of Surgical Treatment. By W. Watson Cheyne, M.B., F.R.C.S., Professor of Surgery in King's College, London, Surgeon to King's College Hospital, etc., and F. F. Burghard, M.D., and M.S. (Lond.), F.R.C.S., Teacher of Practical Surgery in King's College, Surgeon to King's College Hospital, etc. Volume III. Philadelphia and New York: Lea Brothers & Co., 1900.

The third volume of this eminently practical work deals with the treatment of the surgical diseases of the bones in its first part, and with amputations in its second. The authors, for considerations of space, have left the treatment of orthopedic diseases for the next volume. Indeed, they have decided to produce the work in seven volumes instead of six, as originally intended.

The authors fail to give consideration to the ambulatory treatment of fractures of the leg, a subject of increasing importance at the present moment. In other respects, their chapters on this phase of surgery is admirable and includes the constant injunction to verify the diagnosis and the correctness of position by the Roentgen rays. They correctly consider osteomyelitis and periostitis separately, although at variance with some pathologists who aver that the diseases are identical but represent different stages. The consideration given to tumors of the bones is terse, but is consistent with the intention of the authors to limit pathologic data to essential elements.

In the second division of the volume there is a full, modern paper on amputations from which is eliminated all unnecessary and burdensome material. It reflects purely the experience of the authors. As usual, the after-treatment of the patient is fully considered. The illustrations are copious, are especially well drawn, and are mostly original. This volume, it appears to us, must prove particularly valuable to the general practitioner as well as to the surgical specialist.

Simon's Clinical Diagnosis. A Manual of Clinical Diagnosis by Microscopical and Chemical Methods. For Students, Hospital Physicians and Practitioners. By Charles E. Simon, M.D., late Assistant Resident Physician Johns Hopkins Hospital, Baltimore. Pp. 563. With 136 Engravings and 18 Full-Page Colored Plates. Cloth, $3.50 net. Lea Brothers & Co., Philadelphia and New York.

It is a very encouraging sign of progress in scientific medicine in America for a text-book on clinical diagnosis to reach a third edition within four years. Time was when only books on treatment sold into more than two editions in less than five years. As a rule, publishers hesitate about taking text-books on diagnosis for publication at all. Dr. Simon's Manual is in its third edition and there seems no reason to think its popularity will wane. Not all text-books on diagnosis published in the last few years have had a like success, however, and it is a lesson in medical book-making to note the reasons why this manual has sold so well. The qualities that have given it its popularity are, first, its utter practicalness. Nothing is introduced for the sake of erudition, nor merely because it has been a subject of more or less limited discussion in certain medical circles. Secondly, its completeness. Nothing is omitted that the practitioner might find of assistance in eventually perfecting his diagnosis. The discussion of the subject of phosphates in the urine is a typical example of this completeness. This rather indefinite topic is handled in a way to give as clear ideas as possible to the practising physician in the present state of our knowledge of the subject. A third reason for the wide sale of the book is the beauty and significance of its illustrations. The colored plates of the blood are very excellent reproductions of well-prepared specimens. The presentation of the whole subject of the blood is such as might be expected from one of the Johns Hopkins school and more cannot be said. As might be anticipated the illustrations on malaria are well calculated to give correct notions for microscopic diagnosis of phases of malaria, even to those who have not had an opportunity to examine actual specimens.

The two plates on phenyl-glucosazon crystals obtained from diabetic urine and that on the color-reactions in different urines after the addition of the nitric-acid test are really very perfect specimens of the printer's art. It is a pleasure to chronicle the fact that books like this are being written and made (as the making has added greatly to its value) for the medical students and the practising profession in America. The author in his preface says he thinks that most of the volumes of preceding editions were taken by practitioners. This is an inspiring sign that the younger generation of practitioners is careful to let slip no opportunity to keep abreast of the advance in scientific medicine where progress touches practice.

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ORIGINAL ARTICLES.

INTERNAL SECRETION OF THE OVARY.

BY ARTHUR W. JOHNSTONE, M.D.,

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RETAINED excretions are the causes of nearly all nervous conditions, whether at the menopause or during menstrual life. This is a commonplace statement to many of you, and those who have been general practitioners have utilized it in the handling of both their male and female patients; but some have lost sight of it in the recent furor that has been raised over the "internal secretion of the ovary."

Under ordinary circumstances this paper would be entirely out of place, but when the President of the British Gynecological Society, in his last presidential address, 1900, assumes that the ovary has an internal secretion, it is incumbent on those who do not believe it to bring forward the proofs of their faith.

There is not an iota of proof that the ovary has any other function than the manufacture of eggs. For fifty years we have known that the ovary is active during intra-uterine life and that it begins to ripen Graafian follicles at the sixth month of gestation; that this continues rather rapidly until after birth; that during infancy the Graafian follicles still ripen occasionally, but not as rapidly as before birth, and persist in the same ratio up to puberty. At puberty the follicles ripen more rapidly, at least five or six a year, but at no time do they amount to as many as the number of menstruations in the year. This rate continues during the whole of the child-bearing period. During and after the menopause the Graafian follicles still continue to ripen. Of all the ovaries past the menopause that I have removed, I have never found one that did not possess a small number of Graafian follicles in an immature state, and I have frequently found those that have recently ruptured.

The ovary is in no sense a gland. Its epithelium is arranged for the purpose of being cast out and lost, and is not placed so that its secretions, if it has any, could be absorbed either by ducts or blood-vessels. The adherents to the internal-secretion theory claim that it is like the suprarenal, the thymus or the thyroid gland. This I can state positively is not correct. Years ago I made careful studies of these organs. The thymus gland is nothing but the large lymphatic gland which does the work of the lymph structures during intra-uterine life. Its lymph vessels are just the same as those of the axilla or groin. The thyroid gland and suprarenal capsule have no lymphatics that amount to much, but a very rich supply of blood-vessels so arranged that each epithelial cell is closely approximated to a venous radical, thus providing for a rapid absorption of whatever secretion its cells may make. As far as we know these cells are never entirely removed except by a low form of colloid degeneration, which colloid material is readily absorbed by the blood-vessels close to it.

But the ovary has a true duct through which its epithelium when cast out passes off *en masse* to the outer world. In the erect animals the Fallopian tube has great mobility and can attach itself to any particular part of the ovary, but in the dog and wolf the fimbriæ are united to each other and embrace the whole of the ovary and are attached to its base, so that there is no communication between the tube and the peritoneal cavity. This difference is for the reason that the eggs in the dog are ripened in groups, and as the tube has more than one Graafian follicle to deal with at a time, it must surround the whole of the ovary so as to catch everything that comes from it, thus providing a sewer down which everything must pass which comes out of the ovary. Therefore the analogies about which so much has been written do not hold good anatomically. Had the propounder of this dogma made any allowance for menstruation as a separate entity, free from the domination of the ovary, he certainly would have paused before announcing any such doctrine.

If it is a lack of an internal secretion that causes the nervous disturbances of the menopause, why is it that the little girl does not have them? But more unanswerable than this, why is it that a delayed menstruation in a child-bearing woman will produce identically the same symptoms as those of the menopause? This is apparent in all of our every-day work. Let me relate a striking instance.

Last autumn I had in my private hospital a splendidly developed woman of thirty-two, from whom I had removed the whole uterus and both ovaries for a degenerated fibroid. Of course, she had all the hot and cold flashes and nervous disturbances that usually go with such conditions. In the adjoining room was a beautiful young woman of twenty-two, whom I had curetted for an extremely severe form of catarrhal inflammation. She had for years been in the habit of having a five- or six-weeks interval between her menstruations, and it so happened that her menstruation was due at the time that I did this hysterectomy. Until her period appeared, which was some ten days late, the complaints of the two women were identical, but their condi-

tions totally different—one with the whole of her internal organs of generation gone and absolutely nothing with which to let off the menstrual wave, the other with all her internal organs in place, the only difference being that the flow was delayed. Instances of this sort I could multiply from my hospital records by the hundreds; and all that we need is to have our attention called to it to recall scores of cases of the same thing. I think, therefore, that I may lay it down as a rule that if a woman's menstruation is for any reason, except pregnancy, delayed, she is very apt to have symptoms closely approximating those of the change of life. This leads me to believe that the internal secretion of the ovary is a myth. It is the last stand of those who have believed that the ovary dominates everything, and they have taken refuge in the recent experiments showing the immense necessity for glands that we know do have an internal secretion.

Some German professor, who heard his confrère in the chair of practice talking about the wonderful results from thyroid extract, was not going to be outdone in his scientific knowledge, and so assumed that the ovary also had an internal secretion, and immediately began giving ovarian extract to his hysterical patients. He, of course, obtained wonderful results. Some will ask, "How is one going to explain away these results?" We all know perfectly well that if we are positive enough with these hysterical women we can get results with anything. I have frequently succeeded with a combination of salt and soda. This was a suggestion of some of my level-headed nurses, who, after having become worn out with the complaints of some of these people years ago, found that the more horrible the taste of the stuff they gave them the more profound the result would be. Some will ask, "How about the results from transplantation of the ovary?" My answer is that they are so few and far between and altogether unsatisfactory that they probably belong to the same class. Those few who have been benefited have gotten it not from the ovary but from the disturbance of the menstrual nervous mechanism produced by the secondary operation. This has brought on menstruation which, as is well known, is the one great eliminator.

Twice in my life I have brought on a menstruation by removing the appendix. In neither case was the appendix in the pelvis, but lying tightly tied down to the psoas muscle, where the ligatures necessary to control the vessels of its mesentery had to go so deep that the nerve-trunks coming up from the pelvis were involved. The operations were done half-way between the menstruations, and at no other time had the menstruations returned in two weeks, but in both cases they followed in forty-eight hours after the operation; so with this experience I believe that if the menstrual centers in the cord have not degenerated, a disturbance of the menstrual nerves by any kind of an operation is liable to bring on an artificial menstruation, similar to one that follows the ordinary removal of the ovaries. This is reinforced by several other cases that I have seen, in which, without operation, appendicitis itself has brought on menstruation at times when it was not due.

Nature has its great cycles of rest and work. The alternation of the seasons is the one great object lesson which we constantly have about us. The rest of a plant during the winter corresponds to the condition of the woman in the intermenstrual period. The shedding of the leaves of the evergreen, the manufacture of its young leaves and buds, as we now see it around us, corresponds to the menstrual week. The shedding of the horns and hair of the deer is another analogy of the same sort. The molt in birds is another illustration of the same thing, for, as is known, the old feathers have to be dropped and new ones manufactured at a rapid rate. Those who have ever watched a pet canary will be struck with the similarity between its condition during the molt and that of our patients during the few days antecedent to the menstrual flow. The molt is always considered a critical time for birds. They all stop singing, breathe more rapidly, the exposed parts of their skin become more congested, and everything goes to show that an increased oxidation is going on throughout their entire body. The reason for this is shown in the rapid growth of the cores of the young feathers, which have to make immense masses of protoplasm in a short time. An analysis of their excretions shows that oxidation is going on much more rapidly than in the ordinary state.

Just so it is with the woman. When the time arrives for the menstrual pressure to begin, associated with the congestion of the pelvis is an increased oxidation of the whole body, and, as I have maintained so often, and which has been so thoroughly proven by Jacobi, Stephenson and other workers, the result of this oxidation is an increased amount of excretion of every description. The majority of women stand this beautifully. The reason for it is this, if I may be permitted the illustration of a furnace. The draft is what it should be, the grate-bars are properly placed and the fuel burns up completely and passes off through the chimney, the ashes fall out into the ash-pit leaving no clinkers, coke or cinders behind. But, unfortunately, the furnaces of many people are defective in construction. The flue does not draw as it should, the grate-bars do not let in the required air, and the consequences are that the chimney gets choked with soot, and the fire-box retains cinders, clinkers and fuel in different degrees of consumption. For the lack of a better term these people have been classed as the "gouty," and they are the very people who give us the greatest trouble at the menopause. I have often said that if I know the family history of a patient, I can tell positively whether she is going to have trouble in getting through with the change of life. As we all know, here in America, we do not have gout

to any great extent in its explosive forms, but in our dry climate these poisons exert their action on the nervous system, so that our patients with sick headaches, migraines and general nervous conditions are the lineal descendants of European families who were loaded with gout. Haig is undoubtedly on the right track. I do not claim that uric acid is the poison which causes all this trouble, but I do know that the uric-acid group has a great deal to do with it. My friend, Dr. Rachford of Cincinnati, has done a great deal of original work in this particular line, and I am indebted to him for most of the suggestions that have guided me in the handling of these troublesome cases. He has proven beyond a doubt that in addition to uric acid there are many poisons that belong to the nitrogenous group.

We know that urea is the complete oxidation of a nitrogenous compound; that uric acid is the same material, but not completely oxidized; that the various xanthin bodies are the same substance, but still less oxidized, with paraxanthin at the foot of the group in the shape of a nitrogenous body that is only very slightly oxidized.

To take the illustration of the furnace again, urea corresponds to the ashes at the bottom of the pit; uric acid to the coke still left lying on the grate-bars; the various forms of xanthin to coal less and less burned, until we come to the paraxanthin, which is the coal little more than charred.

Dr. Rachford's work has turned on the poisonous properties of these various nitrogenous bodies. He has proven that paraxanthin is the most poisonous of all; also that where we have large quantities of uric acid in the urine some of these xanthin bodies are apt to be found. Several cases of hystero-epilepsy in my practice have been proven to be directly due to the presence of xanthin bodies and the epileptic convulsions were nothing but the characteristic symptoms of its toxic effect. By increasing the oxidations of these patients he has gotten rid of the paraxanthin, and although some of the cases were four or five years old they now remain perfectly well.

It would consume entirely too much time to go deeply into this subject, but those who are interested in it will find it in the Transactions of the Association of American Practitioners, where a great deal of notice has been taken of it. It is true that Dr. Pfaff has found that the presence of ammonia in Dr. Rachford's final fluids has intensified the effect of the poisons, but as we all know that ammonia in itself is not specially poisonous and that without the paraxanthin it will not produce any such symptoms unless it be given in large doses, it only proves that the ammonia compounds of the xanthin bodies are more readily diffusible and more violent in their effects than the substance in its pure and simple state. This is a condition, however, of many drugs—the salt has a more violent effect than the pure article.

Many menstrual headaches are undoubtedly due to something of the same cause. The increased oxidation of menstruation in a gouty subject will increase the number of poisons toward which the patient has a tendency; for this increased oxidation in a menstruating, gouty woman acts like the throwing of more fuel on an already smoking fire.

Assuming that this is the cause of not only menstrual but menopause difficulties, I have for years treated all my cases of either sort by increased elimination, and I am happy to say with uniformly good results. I have had but two cases which gave me trouble in getting them through with the artificial menopause, and both of them were in markedly gouty females. One of them had an uncle, a practising physician, who brought the patient to me after a violent attack of peritonitis that necessitated the removal of the appendages. She made a prompt recovery from the operation, but in the years that followed it was interesting to note how her symptoms corresponded with those of her uncle. It was nothing more than hereditary gout accentuated by the attempts at increased oxidation every twenty-eight days.

The other case was similar in every respect. A markedly gouty history, with a chronic peritonitis that demanded a life-saving operation, although she gave me a great deal of trouble for the first year; finally Dr. Rachford succeeded in making her very comfortable.

Dr. Rachford's work is not yet complete on these bodies and it would be unjust to him to anticipate, but I can say that, thus far, his results have been extremely satisfactory as applied to my work, that in addition to the xanthin bodies we will ultimately find a great many other poisons which are the results of faulty oxidation and its resultant elimination.

So, then, I repeat, there is not an iota of proof, either from analogy or experience, that the ovary has any kind of an internal secretion, but that the troubles which accompany the menopause, both natural and artificial, are due to a faulty oxidation and excretion.

One other cause of this condition is due to the intestinal infection that goes with nearly all these cases, and this allows the colon bacillus and its associates to contaminate the nitrogenous bodies with their ptomains before they are absorbed into the blood. Faulty excretion allows the liver to become "stagnant," as the old practitioners used to say, thus interfering with the circulation of the portal vein. This allows the germs of the intestine to lodge in its epithelial lining. This subject has been discussed frequently, especially in that memorable paper of my old teacher, Dr. Goodell, on the hysterical rectum. Each effort at an increased oxidation only adds to the trouble of a sluggish portal circulation, and thus invites the very condition I have described. This gives one more proof of the necessity for a careful study of the menstrual wave in all its bearings. Until we get rid of the old superstition of "ovarian influence" and similar terms which we have

heard for so many centuries, the reproductive functions will never be thoroughly understood. The last few years' experience has taught me to believe firmly that the ovary, in itself, has little or no influence even on the development of a woman and much less on her well-being after menstruation begins.

Some eight years ago I removed both ovaries from a little girl of eleven who had never menstruated, for double ovarian tumor. She was in every sense a child, and I thought there would be one case of a true female eunuch. What was my surprise a year or so ago to have one of the most beautiful women I ever saw walk into my office. It was this same child come back to show herself. I examined her carefully. Her figure had rounded out to perfection, her breasts were very large and perfectly developed; all the external organs of generation and the vagina were perfect, and the hair on the mons thick and fully grown. In every sense she was as perfect a woman as I ever saw, except that she never menstruated. More than this, she has a beautiful voice.

You will ask how this happened. My belief is that the sexual centers had already begun to develop before the ovaries were removed, and that was all that was necessary to produce every sign of puberty except menstruation. I would wish that others would look up these cases, because I know that many practitioners have had more of them than I have, and I would like to know whether these girls who are operated on before menstruation begins usually develop into full womanhood. If this is the case, the ovary will have to be relegated to the function of producing eggs alone. When we see every other organ in the body controlled by the central nervous system, why is it that we will persist in saying that this one little epithelial body contains all the functions known to womanhood? The only reason that I can see for it is that it originated in an old superstition, and, like every other superstition, will last as long as men will consult the moon before planting their potatoes.

Some will ask, What, then, are my beliefs as to the limits of conservative surgery? My answer is, Where an ovary and its accompanying tube can be left in a healthy condition so that their functions can be easily and safely carried out they should be preserved, but I have nothing but condemnation for those dangerous experiments which result in the leaving of a scrap of one ovary in one part of the abdomen and a piece of a tube in another, or the transplantation of an ovary from one patient to another. Suppose that we could accomplish what we desire—the preservation of menstrual life—what good would it do? It is only postponing the menopause; and the troubles that a woman has at the menopause are hereditary, and what difference does it make whether she goes through them early or late? All of this talk about the shrinkage and atrophy of the external generative organs at the artificial menopause has not held good in my experience, except where I have been careless enough to overlook a metritis or vaginitis. In a few cases of this kind, in my early practice, I did have a form of cirrhosis of the vagina set in, but after I found that that was the cause of the trouble and proceeded to cure it with yellow oxide of mercury, I have had no more trouble of this kind.

In conclusion, I would say that all of this furor about the internal secretion of the ovary only results in bad work, as it gives a cloak for leaving patients in dangerous conditions, and an excuse for not doing the tedious part of our clinical work.

INTERNAL ANTISEPSIS.[1]

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I AM fully aware that in presenting this subject I am giving opportunity for the expression of widely divergent opinions and that I am entering upon a territory which has been the field of fierce combat. But when this discussion shall have been finished I am sure that, if the distinguished gentlemen who have taken part are not entirely in accord as to its possibility or the means of accomplishing it, they certainly will agree that some method of attaining internal antisepsis is desirable and that, at least, some progress has been made toward it.

It goes without saying that in the treatment of infectious diseases lies the field of internal antisepsis. Strictly speaking, then, in septicemia, this should be useful and possibly in some pyemias the pus foci of which are not accessible to the surgeon. In presenting this subject surgical methods are not decried, but, on the contrary, as prevention is of far greater importance than cure, any infection-focus capable of being treated surgically should receive that kind of attention. This paper is not a plea for the substitution of medicine for surgery, but for a method of combating infection when surgery fails.

1. Is internal antisepsis possible? If we assume that the picture usually presented by septicemic patients denotes general infection, and that these symptoms—chills, malaise, headache, fever with remissions, restlessness, marked prostration, sweating, muttering delirium—and these signs—red and glazed, later leathery tongue, a full and bounding pulse which later becomes compressible, enlargement of the spleen and hypostatic congestion of the lungs—indicate septicemia and establish the diagnosis, that under the administration of remedies which are taken into the circulation these symptoms and signs are relieved and become less evident and finally recovery ensues, the suspicion may be entertained

[1] Read before the Medical Association of the Greater City of New York, May 14, 1900.

that the remedy may have been the cause of the recovery. If this association of remedy and relief becomes absolutely constant, or fairly constant with explainable failures, the suspicion may become well established opinion. To be an antiseptic, a remedy must either prevent the growth of, or completely destroy, the micro-organisms. To be efficient the substance must come in contact with micro-organisms wherever found. That micro-organisms have as wide an area of distribution as the blood is well known. If an internal antiseptic is efficient not only must the symptoms referable to bacterial activity be diminished or abolished, but evidences of their presence must be wanting in the excreta, sputum, feces, and urine. Let us see how far each method of demonstration may be applied.

Enteric fever is beyond question an infectious disease. The later stages, at least, are the full development of septicemia. Chlorine, as I pointed out in my Albany paper in 1895, cleans the tongue, improves appetite and digestion, lessens the fever, and frees the stools from odor save that of the drug used. The general strength, intellectual processes and nervous conditions improve. The disease is shortened in duration and usually proceeds to a rapid and complete recovery. The histories embodied in my first report were those of long-continued enteric fever, observed at Bellevue Hospital, and usually promising but little hope of successful treatment. My second report in 1899 was based on quite as difficult subjects—returned soldiers from the Spanish war—and was equally emphatic. The observations merely confirm the experience of East Indian physicians who have employed chlorine for many years. More widely known are the papers of Yeo on this subject.

The second method of obtaining confirmatory evidence, by examination of the sputum, has been practised with considerable success. The administration of creosote, especially the carbonate, when prolonged is followed by a diminution of the number of the bacilli of Koch found in the expectoration, as has been shown by Holscher and others. Certain volatile substances which are excreted by the respiratory surface are efficient, particularly the terebene obtained from the *melaleuca*, as has been demonstrated by Forne.

The third method of proof is illustrated by the observations of Bouchard upon the results of the administration of naphtol for various conditions found in the alimentary canal when the number of pathogenic bacteria found in the feces was very markedly diminished. Quite in harmony with these observations were those of Hueppe, who found that no cultures could be made from the intestinal contents of a patient who had died from apoplexy supervening during Asiatic cholera and who had been treated by bismuth tribromophenolate exclusively. In other and exactly similar instances, when tannic acid injections had been used, cultures were made without difficulty.

There is a necessity for important work in examination of the feces to note the results of the administration by the mouth of various antiseptic and germicidal substances, which I trust may be recognized at no far distant time.

By the fourth method of proof, examination of the urine, we may establish certain facts. It has been known for some years that the large majority of patients suffering from enteric fever discharge large numbers of the bacilli of Eberth in their urine. Quite recently Richardson, Horton-Smith, Gee and Andrews have demonstrated that hexamethylen-tetramine will cause an entire disappearance of these bacilli when it is administered by the mouth. A method which has been employed for determining the value of certain plans of treatment calls for a word in passing. I refer to the urinary toxicity and its observed variations. While changes in the urotoxic coefficient might be assumed to indicate variations in the elimination of toxins by the kidneys, this method of research was sufficiently seductive to have led several observers to place faith in it as an accurate method. Since, however, it has been shown that even urine from presumably healthy individuals when injected into animals produces varying results, according to the species to which the animal belongs, and further inconstant results even in animals of the same species, the findings from injections of urine from infected subjects are still more unreliable. Until we have a method of obtaining the amount of toxins excreted by physical or chemical methods this plan should be abandoned, as giving rise to misleading results.

2. Can it be detrimental? To this question must be given a decided affirmative answer. The fact is well known that certain substances which *in vitrô* are most trustworthy antiseptics are poisonous in the body. Instances of fatal poisoning by phenol, iodoform, corrosive sublimate and others, are too frequent to be ignored, and these must be eliminated from the list of remedies which we may employ for the purposes discussed in this paper. Those substances which are locally irritant act unfavorably upon tissues or destroy blood corpuscles must be barred. One question is frequently raised—and particularly with reference to intestinal antiseptics—are not bacteria essential to digestion and absorption? In rendering the alimentary canal free from pathogenic bacteria, are we not interfering with the nutrition of the patient? While it is true that certain loosely-held chemical compounds, as salol, bismuth salicylate and others, are broken up by bacterial activity, the preponderance of evidence is largely against bacteria of whatever kind being necessary. Confirmation of this opinion which is held by Nencki, Nuttall and Thierfelder is furnished by Levin from his observations in the Arctic region. While there he found that the intestinal contents of polar bears, seals, eider ducks, and other birds, sharks, sea-urchins, anemones and crabs, were nearly always sterile. Neither could cultures be made nor bacteria be found.

3. Under what conditions may it be employed? In the first place, any focus of infection which is amenable should be treated by surgical intervention. Further, infections resulting in septicemia in which the toxins are most potent in causing danger should be neutralized by antitoxins. I refer especially to diphtheria, in which the toxin elaborated by the Klebs-Löffler bacillus is presumably more important than the bacillus itself. On the contrary, in those cases where streptococcic infection is of most importance, either as primary or secondary, and where the serum treatment is at best not thoroughly established internal antisepsis must be carried out. As for the condition of the patient, great care must be exercised in administering remedies which may act unfavorably on the heart or kidneys. For instance, in acute polyarticular arthritis, which is nowadays generally admitted to be an infectious disease, salicylic acid must be given with caution if the kidneys are not sound. Also, in chronic dysenteries naphtalin will produce violent cystitis if any irritation of the bladder be present. Almost all of the phenol series are marked heart-depressants and should be administered with care to those whose hearts are incompetent. Naphtol and some of its derivations produce acute indigestion; this list might be further extended. To sum the matter up in a few words, kind Providence is just as watchful over the pathogenic bacteria as over their unwilling host and care must be exercised that in destroying the enemy the patient does not suffer. Obviously, when structural degenerations have become established, this, in company with all other forms of treatment, fails. Lastly, a recent writer may be quoted with profit, as follows: "Bacteriologists often make the mistake of denying the efficiency of minimum doses of so-called intestinal antiseptics, simply because the bacteria were not killed by their agents; they forget that exceedingly small quantities of these substances might paralyze the bacteria and prevent them from forming toxins, even though powerless to kill these organisms."

4. How is it best obtained? This may be best considered by dividing our agents into groups.

(*a*) The general internal antiseptics, such as chlorine, silver, the salicylates and quinine. Chlorine has been known as a disinfectant from the time of Halle (1785). When administered by the mouth it is in part changed into chlorides by combination with alkaline bases in the stomach or blood and in this form is excreted by the kidneys. Edwards, however, showed that all is not so combined, for in a fatal instance of enteric fever the necropsy showed enormous ulcerations in the intestines which were dyed a greenish-brown color. If inhaled it permeates all organs and tissues and even penetrates to the brain. Cameron reported that in a fatal instance of chlorine-poisoning, the distinct odor of chlorine was perceived in the brain. Further evidence is to be found in the fact that when administered by the stomach, the nose being held, the odor of chlorine is noticed in the breath within a few minutes. Locally, chlorine is irritating, quite so to the respiratory and but slightly to the alimentary mucous membrane. If given internally in moderate doses it quickens respiration, increases the force and frequency of the pulse and excites the functions of the organs of secretion, notably increasing the flow of saliva and of bile, the latter an antiseptic of no mean value. Because of its action on the kidney it is presumed that the toxins already formed are more rapidly eliminated. As factors of less importance are its stimulating effect upon the heart and increased digestive power. In the treatment of enteric fever the results already noted are quite constantly obtained. The class of cases for which I have reserved the use of chlorine are those which have come under my observation late in the course of the disease. They have frequently run the gamut of the so-called Brand treatment, either mitigated or unmitigated, expectant or hopeless methods or even of intelligent let-alone management. The chlorine water of the Pharmacopœia, freshly made, in doses of from one to four fluidrams every two to four hours, well diluted, has been amply sufficient. After reading Sanulli's argument a few years ago that in this disease the intestinal lesions are the result of the toxins circulating in the organism infected by the germ of Eberth, and that this is the principal cause of the material manifestations and morbid phenomena which go to make up the clinical picture of enteric fever, I was tempted to commence the treatment in its early stages with chlorine. Formerly, I had employed such insoluble antiseptics as bismuth naphtalate, various preparations of salicylic acid and naphtalin. In a few instances the results were not satisfactory from a clinical standpoint, so that I was forced to believe that Sanulli was wrong in his conclusions. How far chlorine may be of use in other infectious diseases I am not at present prepared to state. In a recent instance of septicemia, resulting from a pulmonary abscess consecutive to a septic pneumonia, although the interval between the extreme oscillations of temperature were appreciably lengthened and the fetor of the breath lessened, the amplitude of temperature excursion was not diminished.

Silver has been recently suggested for use as an internal antiseptic. It was about 1890, I think, that Carey Lea showed that silver existed in allotropic form. Seven years later Credé made use of colloidal silver, so-called, in medicine. This is almost entirely soluble in water and albuminous fluids and seems to inhibit the action of staphylococci and streptococci or destroy them altogether. For internal use, to prevent its conversion into a chloride in the stomach, it is first dissolved in equal parts of albumin and glycerin. Since it is unirritating, it may be administered hypodermatically in aqueous solution. In the early days of its employment it was rubbed in a fifteen-per-cent. ointment. Resort has been had to rectal and intravenous injections.

The dose is about one-sixth of a grain, two or three times daily. Credé claimed that it had a very beneficial influence and often affords a rapid cure in recent and also in chronic sepsis and furunculosis, when secondary changes in vital organs have not occurred. Various conditions have been treated; osteomyelitis, phlegmonous angina, furunculosis, erysipelas, so-called gonorrheal and articular rheumatism. Various reports, some very enthusiastic, have been presented; on puerperal fever (Peters, Jones, Voorhees), cerebrospinal meningitis (Schirmer), acute mastitis (Cumston), malignant scarlet fever (Credé), diverse septic processes (Werler), furunculosis (Wolfram) and, finally, purpura in the horse (Dieckerhoff), which according to this author is due to the introduction of a special virus into the blood of the animal. Schlossmann has shown that this substance is non-toxic and unirritating to mucous membranes. Thus far no instance of argyria has been reported. My own experience with septic phlebitis in which an unusually large percentage has occurred in patients suffering from enteric fever has been more satisfactory. Here it has been employed by inunction for thirty minutes. In one instance of septic phlebitis following amebic dysentery the results were almost marvelous.

The use of the salicylates in acute polyarticular rheumatism is too well known to require more than passing mention. The only point of importance, not generally considered, is that while salicylic acid is antiseptic the salicylates are not; the question is, therefore, to choose substances which yield salicylic acid within the organism. Malarial fever is a disease resulting from an infection if the investigations of Ross, Manson and Bignami are accepted. Quinine, then, preferably as a carbamide, given hypodermatically, is a method of internal antisepsis applied to combat an especial infection.

(*b*) To combat infectious processes having their most active manifestations in the alimentary canal is no new problem. Many methods of treatment depending more or less upon internal antisepsis, sometimes without credit to the method, have been advanced. Naturally, a clearing out of the intestines is of the same order of procedure as the evacuation of an abscess. Bile is claimed, certainly with some reason, as an intestinal antiseptic. Others, regarding the alimentary canal as a sewer, abandon all hopes of even measurably freeing it from bacteria. Still others unknowingly testify to the value of intestinal antisepsis by giving hydrochloric acid or small doses of calomel in enteric fever.

Among remedies most useful for intestinal antisepsis may be reckoned various insoluble substances: Naphtalin, betanaphtol, and various bismuth compounds. As long ago as 1887 I reported my observations with naphtalin in the treatment of some old army dysenteries. This, however, sometimes produced vesical irritation and other untoward symptoms. Betanaphtol was found to be too irritating to the stomach, so that although the reports of Bouchard were positive as to its antiseptic action its use was abandoned. Salol was effective in many instances, but its use presupposed sound kidneys, and in the presence of fever or too acid contents of the duodenum it was not decomposed into its constituents. The bismuth compounds were not irritant and their use has been crowned with success. Two have been especially studied, the naphtolate and tribromo-phenolate. In his experiments with the former Jasenski found that while the bismuth was almost completely excreted by the bowels, some of the naphtol was eliminated by the kidneys. In daily dosage of seventy-five to one hundred and twenty grains for an adult it is certainly not poisonous, and the quantity is quite sufficient to inhibit bacterial activity. The literature has been extensive and, in general, confirms my personal observations. As for the tribromo-phenolate the observations of Fasano are quite conclusive. After the administration of this remedy the amount of indican in the urine was markedly diminished, as was also the amount of putrefactive action in the intestines. After five days the feces of patients suffering from enteric fever gave no cultures of the bacilli of typhoid fever and bacterium coli. Intestinal tuberculosis, in some instances yielded to emulsions administered either by the mouth or rectum. Apparently in this substance, the tribromo-phenol is slowly liberated so that no poisonous symptoms are produced, although the daily amount may reach over one hundred grains. Some of it, at least, passes out through the urine, for Reynders has been able to detect tribromophenol twenty-four hours after the absorption of the drug.

During the past three years another bismuth preparation has attracted considerable attention. I refer to the tetraiodophenol phtalinate. The laboratory studies of Klebs, Kruse and Lieven made with the sodium salt furnish evidence of its antiseptic action. The consensus of opinion seems to be that it is harmless and yet efficient. The only untoward effect which has been observed was an iodine acne which promptly disappeared. Bacteriological experiments made with the sodium salt indicate that it is effective against various pathogenic bacteria, notably staphylococci, streptococci and the bacilli of enteric fever (streak cultures on agar Petri plates). This differs from the other bismuth compounds in that it is, according to Loeb, at once split up by the gastric juice into bismuth oxychloride and tetraiodophenolphtalinate in which the iodine is certainly important. The necessary dose is somewhat smaller, five grains, thrice daily, being sufficient.

(*c*) Remedies for internal administration which have been designed to act upon the bacilli of tuberculosis are too numerous to be mentioned. Creosote has generally been conceded to be useful in the treatment of pulmonary tuberculosis since 1833, when it was employed by Reichenbach, to the present time. The disadvan-

tages of even beechwood creosote are well known. The non-toxic and unirritating carbonate and perhaps other derivatives and guaiacol carbonate have thoroughly supplanted it. While I am sure that no one can claim that creosote is germicidal, as regards the bacilli of Koch, we are sure that it renders the soil upon which these flourish unsuitable for their growth; in other words, it inhibits their development. Twenty to sixty drops thrice daily in sherry or port seems to be efficient. As to its value in pneumonia we have the testimony of Thomson, Smith, Cassonte and Corgier. Guaiacol carbonate is certainly harmless if we place credence upon the laboratory study of Eschle. Of this four to seven grains four times daily are sufficient to yield good results. Quite recently a glycerol ether has been lauded by Butler, but of this I cannot speak from personal experience.

Quite lately I have undertaken the investigation of a terebene derived from the *Melaleuca*, which is probably a mixture of three products, eucalyptol, terpineol and possibly citrene. This is excreted by the lungs and since it is unirritating can be administered hypodermatically. It is quite too early to report results.

(*d*) Of all the remedies which are classed as urinary antiseptics, hexamethylen tetramine probably stands at the head. This substance, a condensation product of formaldehyde and ammonia, dates back to 1860 when it was made by Von Butlerow. Its use is to sterilize the urine by destroying micro-organisms which it does effectually and finds ample field for its employment in pyelitis, pyelo-nephritis and cystitis. Even large daily doses, to one hundred and fifty grains, are well borne, although these are entirely unnecessary. Nicolaier employs about eight grains, thrice daily. Formaldehyde is liberated in the urine and this, even in the smallest quantity, prevents the development of micro-organisms. Richardson finds that a constant result of its administration to patients suffering from enteric fever is the freeing of the urine of the bacilli of Eberth. A personal observation in regard to the bacillus of Koch is that the urine of a patient afflicted with tuberculous cystitis shows a much smaller number of bacilli during its administration, but a continuance of the medication is necessary.

I am aware that this subject has been presented in a fragmentary and incomplete manner. My purpose has been to point out what has been accomplished by many observers, and how far the answers to the questions propounded in this paper may be justified by the facts at our disposal.

Thirty years ago the foundations of surgical antisepsis were laid and the development upon these foundations brought about by Lister and countless followers has resulted in the ideal having been nearly attained. To-day one may consider that internal antisepsis rests on quite a secure a basis as did the surgical when the pioneers began their work, and the ensuing three decades will doubtless bring to fruition our most daring hopes. As the surgeon gives credit to Lister, so must we acknowledge our indebtedness to Bouchard for many of our facts, trusting that others will continue the work which he so painstakingly has begun. At this time, we can safely say that internal antisepsis is more than the dream of the theorist.

Internal antisepsis is possible, may be useless or detrimental under certain conditions, or may be absolutely contraindicated, because of the patient. How best to attain internal antisepsis is a question to which the answer will vary with each succeeding year as our knowledge of infectious diseases and the best means of combating them rest upon a broader and more secure foundation.

THE TREATMENT OF CONSUMPTION AT HOME.[1]

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No single subject of general interest to the practitioner has been attracting so much attention recently as the topic chosen for the subject of this paper. The fact requires no explanation. The widespread prevalence and high mortality of pulmonary tuberculosis are so well known that statistical data of every kind would be superfluous. The ceaseless interest that has attached to the study of all questions connected with consumption, so-called, is evidence of the importance of the study to the physician and to the community. The enthusiast may devote his life to the elucidation of an idea or of a speculative problem. It is the practical question which enlists the patient, persevering effort of many workers.

It cannot be said that the treatment of consumption may be ranged in the category of questions that have nearly found solution. No one would think of classing it in this respect with diphtheria or malaria or syphilis, or even with diseases not yet amenable to treatment by specifics, such as rheumatism, pneumonia and typhoid. But the problem may be considered as approaching solution.

The promise thus held out to the consumptive and to his family does not come to them with the glamour of specific and prompt effects to be obtained from the use of secret nostrums or of semi-quack remedies. There is to be no wonderful change wrought after the fashion of the Arabian Nights' performances, where the good genius anoints the patient or injects him with his little syringe, and the unhappy sufferer emerges radiant in his new equipment of health. No "open sesame" shall instantly remove the bars of the sick-room; but honest, patient, intelligent endeavor shall aid the patient in his

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battle against the malady that oppresses him and, in many instances, turn the scale in his favor.

It would almost seem that in this one feature —the treatment of pulmonary tuberculosis—the researches of science had not been an unmixed blessing; or, rather, that the light shed upon the subject of causation, preeminently by Cohnheim, Villemin and Koch, had served rather as a will-o'-the-wisp than a true beacon. Given a specific germ or bacillus as the cause of the disease, what more natural than that the next aim of all research should be a specific remedy, a parasiticide? The more recent advances in our knowledge of immunity, the discovery of the antitoxins of diphtheria, tetanus and of the bubonic plague, all tended but to stimulate the search for a similar remedy for the relief of a disease, whose annual mortality exceeds that of the most virulent and destructive of all epidemics.

Thus, it has come about that we have wandered afar from what seems to be, if not the true, at least the safest path; and now that we have followed the different marsh-lights, our feet return to the old road; we are somewhat wiser for our various errors, with some illusions gone, with our experience as a safeguard against too eager pursuit of every chance, but with courage undaunted by past failure and with earnest undiminished hope for further success.

It is not difficult to see why we have strayed. All therapeutists, in the pursuit of the *specific* idea, seem to have lost sight of the fact that pulmonary tuberculosis in the only forms which are amenable to treatment, that is to say, in its chronic forms, is always either a mixed infection or a process so limited in its distribution that natural safeguards will surround the tuberculous area with an investing capsule and thus make it harmless.

The term consumption is wonderfully well chosen. It characterizes, as perhaps no other single word could, the dread course of the malady and furnishes the reason for its fatal ending. It is the consumption of tissue, of strength and of resisting power, so far in excess of the power of repair, that leads to the "decline," another polite term for the same process. The suggestion comes almost spontaneously that a cure is only to be sought either by arresting the waste, or by so increasing the assimilation that the balance will remain on the credit side of the patient's ledger. It would appear that whatever agencies can increase the assimilation of nutritive material not only furnish substance to replace that which is lost, but that this very increase of constructive metamorphosis promotes directly that increase of resistance which stays the destructive agency. We not only get an amount of good money equal to the bad, but we prevent the bad money from being put into circulation; we not only put on a pound for the one that has been taken away, but the new pound thus formed causes the slower removal of the next pound; the patient thus being steadily strengthened for his battle.

The treatment of consumption may be properly classified as the specific, the climatic, and the dietetic and the hygienic. Some allusion has already been made to the specific treatment. The search for such has flooded medical literature at different times with the most curious suggestions. The remedies most prominently mentioned in recent years have been the various derivatives of the tubercle bacillus; the original tuberculin of Koch, his later tuberculin R.; the tuberculocidin of Klebs; the special forms of culture products the secret of which remains with their discoverers—and advertisers; the phosphorus combinations, under the supposition that the causal element was a deficiency of phosphorus; the hot-air inhalation treatment, the injection of cinnamic acid and the absurd treatment of Bergeron of inflating the bowel with sulphuretted hydrogen, were all dominated by the one idea of curing the disease by killing the poison that was its cause. The futility of such efforts, easily understood when the pathological substratum is taken into account, is now generally conceded by the majority of the profession. With regard to tuberculin, the acts are not yet closed, in spite of the clear unchallenged demonstration by Virchow that the introduction of this product into the circulation often occasioned a general dissemination of a previously localized process; and thus furnished the means of undoing what natural efforts, unaided, had accomplished for the arrest of the disease.

Creosote was also introduced, originally for its specific action. The idea that it possesses such power is no longer current—the tubercle bacillus is not likely to be reached by the remedy in any such concentration as could impair its vitality or retard its growth—yet creosote continues rightfully to hold an important place in the treatment, because in small doses it seems to promote digestion, to increase appetite and thus to favor those natural forces through which the return to health is made possible.

It is fair to presume that the search for specifics is not yet done nor likely to be given up. The prize is too great, the reward too tempting, whether considered from the broad side of humanity, or from that of material gain, but the philosophy of past experience would seem to show that the patient's safety does not lie in that direction.

The climatic treatment deserves more than a passing mention. It has proved its title by many victories; it has withstood the reproach of many failures. Without reference to the advantages or the disadvantages of any geographical zone or altitude, the great difficulty in its application is the limited number of patients, whose pecuniary circumstances will permit them to take advantage of it. With the wide prevalence of consumption, the great fraction of its victims must always come from the working classes whom removal from home and a life of contin-

ued idleness are alike impossible. Even where pecuniary considerations do not enter into the question the victim will often prefer the certainty of speedy death to the possibility of recovery in exile, removed from home and kindred. The patient sent away for his health, with the necessity for completely severing all business and social ties, finds himself among strangers without any anchor. His heart, too, like that of Goldsmith's Traveler, "drags at each remove a length'ning chain." The very fact of his want of occupation makes him an easy prey for nostalgia, so intense that it may prove almost fatal. There can be no greater suffering, even in physical pain, than that occasioned by such attacks of homesickness. It is because their life's work may be resumed even in new abodes that physicians, who are forced to try a change of climate because of pulmonary disease, show more rapid and permanent improvement than patients from other callings. When the patient is fairly settled in his new quarters he whiles away his hours with others, who, like himself, have sought "some air, some weather, and some earth." He fortifies himself, in the language of Robert Louis Stevenson, with "tonic, bitter wine and perpetual beef tea" or "sooks awa' at codliver ile till it's a fair disgrace."

Let me not be misunderstood. I would not underestimate or speak lightly of the benefits of climatic treatment in this disease. Indeed, there are many cases in which it would be gladly undertaken, if patients could have anything like a fair assurance that the banishment would not be permanent; that, after a stay of a few months in the selected spot, they might return with a reasonable hope of a comfortable existence. I believe that it is the combination of climatic treatment with the succeeding home treatment that will often yield the best results. Many a patient will bring the sacrifice, of money and of sentiment, exacted by a removal from home and the cessation of business activity, if there is a fair promise that the benefits accruing will not be more than neutralized by his resumption of a life at home.

The great majority of our consumptives must remain where circumstances have placed them. For them, for the suffering poor, the third plan of treatment, the dietetic and hygienic treatment, holds out a ray of hope so promising that it requires only determined effort on the part of the profession to rob the dread disease of many of its terrors. The dietetic and hygienic treatment may be summed up as consisting of good air, good food, good rest and good cheer, and there should be an abundance of each.

Our opinions of the value of "good air" in the treatment of pulmonary consumption have undergone no change; it is merely a question as to what constitutes good air, and how it should be administered. The impression has been general that rarefaction was an essential feature of good air, and for some time it was held that an altitude of 6000 feet, or thereabouts, was indispensable. While not denying to the atmosphere at this altitude the advantage of purity sufficient to make it of special therapeutic virtue, it has been shown that much lower altitudes will answer quite well for consumptive patients. Thus, the famous sanatorium at Nordrach in the Black Forest is 1400 feet above the sea level, Ventnor on the Isle of Wight, and Bournemouth on the southern English coast are practically at the level of the sea. The results obtained by Detweiler at the Sanatorium of Falkenstein in the Taunus range are familiar to all. But the rapidly accumulating experience of the past few years, gained largely at the various sanatoria, has already established the fact that no air, even when seemingly most unfit, such as the atmosphere of the crowded city, is altogether objectionable, provided it be the air of outdoors. The warm, stuffy, oft-breathed and much contaminated air of the ordinary living-room, no matter how spacious the dimensions, is unfit for the tuberculous patient. It has just been said that some air is better than others; naturally the free, pure, quick-shifting air of the higher altitudes will fill the requirements better than the soot, dust and gas-laden atmosphere of the large city, yet the latter still contains all the ingredients sufficient for the patient, whose progress in this medium will be somewhat slower, but there will be progress.

It is particularly for the purpose of showing that this atmosphere forms a medium not wholly unfit for the lungs of the tuberculous patient that so much recent work in the direction of the home treatment for consumptives has been undertaken. The most noteworthy feature in the reports of recent studies is the uniformity of success under climatic conditions the most diverse. From large cities, such as Manchester, England, practically at the sea level, with considerable moisture, in inland and upland villages, in small sanatoria in England, Ireland, Scotland and Wales, in Germany and France, and in our own country, most encouraging accounts have been furnished. We may thus safely feel that we are not of necessity bound to any climate or altitude; we may take advantage of the more favorable conditions offered by these, when the circumstances of the patient, pecuniary and otherwise, permit; but we have no right to despair or give up the battle because the patient cannot be sent from home.

Granted that the patient shall receive the air fresh from outdoors, how much shall we give him? To begin with, about twenty-four hours worth every day. The patient must live out of doors. In winter he does this by being warmly muffled up in fur and blankets, with hands and feet well covered and sitting or lying in the open air in the sunshine if possible; protected from the wind, if need be, by a small canvas screen. If there is rain or snow, a glass-encased veranda will supply the place of the solarium of the sanatorium; or a canvas cover to the veranda, leaving an opening for free access of air, will an-

swer very well. The patient rests out-of-doors and must therefore be well covered with clothing and wraps. In summer the shady spots in the open will naturally be sought. At night the windows of the bedroom are kept wide open, winter and summer. The excessive cold of the winter night may be tempered by a grate fire in the open hearth, but fresh air must enter freely from without. Dr. Millett of Brockton, Mass., in a recent report to the *Maryland Medical Journal*, has shown the courage of his convictions by having five of his patients sleep out-of-doors during five or six months respectively, from June to November. A platform was built at the height of the second floor; on this the patient's bed was placed; and here, except on rainy or stormy nights, he slept soundly and comfortably; never being the worse for the dews or even for light drizzling rains.

Where the patient can be induced to do this, there would seem to be sound reason for preferring the canopy of heaven to the restricted space of the bedroom, however free its ventilation. With firm persuasion on the part of the physician the first objection to such a change in the patient's way of living can usually be overcome, although the rank heresy that night air is harmless, flying, as it does, in the face of all established tradition, always causes a prompt objection. Later the patient's own judgment can be left to deal with the problem. So marked is the improvement, so decided the change, that the consumptive will soon complain of the oppressiveness of the air in any room with closed windows. When not in the open air, it should be made a rule that the temperature of the living room during the day should not exceed 65° F., and for five or ten minutes of each hour the windows should be left open, even in the most severe cold. Along with other fallacies we have swept away the bugbear of taking cold when a breath of fresh air enters the living room of the consumptive patient. The impure, hot air weakens and enervates; the cold, fresh air revives and exhilarates the patient. Fresh air in abundance comes first in the treatment, because fresh air means better appetite and better sleep, better oxidation, better nutrition.

Next to good air we place good food. Of this, too, there must be an abundance. It will be the physician's duty to crowd the food as he has crowded the air; and it will require more tact and persuasion. There is at times an actual aversion to all food; at others, a strong repugnance to those simple nutritive aliments that come under the head of the easily digested varieties. Meats and fats are special objects of dislike. Actual vomiting, sometimes caused by, again without, cough, may make alimentation difficult. We are however confronted with a simple self-evident proposition. The fire cannot be kept burning without fuel. Patience, firmness and sympathetic reasoning will generally carry the day. The doctor must stand his ground. He should use caution in stating his terms, but he dare not recede from his position or accept any compromise. Much of the ultimate success will depend on the patient's recognition of the necessity for obedience, of his willingness to execute literally the details of the treatment. The greater success of treatment in sanatoria doubtless depends on the influence of example in securing uniform adhesion to established rules. The older patients, those longer in the service, always carry along the new arrivals.

In private practice the task is more difficult, but not to be shirked on that account. Frequently the feeding must be forced at the outset and many dyspeptic symptoms, real or fancied, offer difficulties. The best plan would seem to be to disregard these entirely and continue the feeding. The appetite will grow with what it feeds upon. Three full meals daily should be required. If no gastric symptoms are present and the appetite returns, a sandwich or cracker may be taken between meals. The egg treatment, suggested by Dr. Ely of Rochester, would seem to have a place in the few cases when other foods cannot be taken. Raw eggs are given in steadily increasing number until as many as two dozen are consumed daily.

The effort of the physician is always directed to securing an amount of assimilation in excess of the waste of tissue. Any craving for plain, wholesome, easily digested foods, or for fruits should be indulged; and, contrary to the plan for healthy individuals, the patient should be steadily encouraged to eat more than he wants. Cream and butter should be introduced into as many dishes as possible. Buttermilk and koumyss make acceptable beverages, particularly where fever is present. Albumen water, flavored with lemon, orange or pineapple juice may be substituted for the raw eggs. Concentrated soups, thickened with rice, barley, farina or sago, having an egg or two stirred through each cup, should be taken daily.

Finely scraped raw beef, served with salt and pepper, or covered with a layer of grated chocolate, will be taken when cooked meats are objected to. Game of all kinds may be allowed. Of questionable propriety is the use of pastries, sweets or stimulants, including under stimulants coffee, tea and alcohol. As a general practice they should be omitted from the dietary. The object always is to crowd the nourishment, keeping watch over the digestion, so as not to cause the patient to rebel. The more promptly he grows accustomed to the outdoor life, the better the appetite, and the greater the power of assimilation.

The third feature is good rest. Exercise means tissue waste. The thrifty man of business so arranges his affairs that the income shall more than meet expenses and his constant effort is to curtail the expenses. The poor consumptive has a hard time of it, trying to maintain a balance between income and expense account of his nutrition. He, too, must curtail expenses

where possible and the readiest method is to avoid every effort. He must rest, in the day on a reclining chair or couch in the open air, at night in his bed.

It has been thought a wise plan, particularly at high altitudes, to urge exercise in the open air; camp-life, good enough in itself, but likely to be attended with many needless hardships, not necessarily severe, but always excessive for the sick man; cow-boy life on a ranch; mountain climbing, etc., etc. All of these have their advantages, when the sick man is no longer sick, but while he is sick he must rest, absolutely, continuously and cheerfully. The rule in the Nordrach Sanatorium is that the temperature shall be taken four times daily and the patient gets no exercise until there is no fever. Absolute rest means mental rest as well as physical; this rule is so strictly enforced at Nordrach that patients go to no entertainments, receive no visits, and have their telegrams and letters passed upon by the director; so that no unwelcome, disturbing or exciting news may reach them. This is perhaps an extreme position, but we play for a high stake in this game and every factor counts. The family as well as the patient must be advised and cautioned to eliminate all sources of excitement and worry. The patient should be allowed to sleep as much as he chooses, being awakened only for meals. The excellent results obtained by Trudeau at the Saranac Sanatorium are due in no little degree to the recognition of the importance of absolute rest in connection with other features of the treatment. With a perfectly normal temperature the patient may take a short walk, the thermometer being used after the exercise. If there be return of fever, the walk is either not repeated or greatly shortened. If the temperature remains normal, exercise may be made a part of the daily program, always being controlled by frequent use of the thermometer. The patient cannot rest too much in the early part of the treatment.

Our fourth factor is good cheer. The moral influences surrounding the patient are all important. The text-books dwell upon the familiar "spes phthisica," the pathetic hopefulness of the consumptive, contrasting so sadly with the evident approach of death, of which he alone remains unconscious. It is a frequent occurrence, but the opposite mental attitude, that of resigned indifference, is not less common. Many victims discuss their condition with a certain uncomplaining hopelessness, the conviction of the fatalist, that what must be, must be, and so any positive effort to improve the condition is useless. "Kismet."

The sick man requires constant encouragement from physician and friends. There should be no manifestations of sympathy, but all conversation should be based on the premise of final recovery. The hope of achieving such result must be held out as an incentive to rigid adhesion to the prescribed rules. It is here that the physician meets with grave obstacles. The patient may be ever so willing and conscientious, the design is thwarted by interference of well-meaning, but misguided friends and relatives. The physician must have faith in his own advice, for there can be no works without faith, and he must be able to impress his earnestness upon the patient and his immediate surroundings. Here again the sanatorium has a great advantage of controlling the surroundings of the patient. The beginning of the treatment is the most difficult; once started in the proper direction, the patient improves so manifestly that the task becomes easy. It should be explained to the patient that indulgence in petulance or fits of anger is a serious drawback and delays recovery; and to the family that a little care and thoughtfulness on their part will avoid needless friction.

But what of medicines? Medicines from the shop really do not enter as a necessary part into this plan of treatment. Many cases have so far recovered as to be able to resume work without any medicine. It may serve a certain purpose to give some simple tonic. Creosote in small doses or the bitter tonics can thus be employed. For the night-sweats, a pill of agaricin, gr. 1/6, and atropine, gr. 1/96, may be given at bedtime. A sponge bath of vinegar and water, mixed in equal parts, given at bedtime may control the night-sweats without special medication. If cough or pain be very severe the new derivatives of morphine, dionin, gr. 1/6-1/3, or heroin, gr. 1/12-1/24, will be found very serviceable. Diarrhea, if not dependent upon tubercular ulceration of the intestines, may be checked by the use of bensozol and codeine, or by opium and its derivatives. Many of these annoying symptoms will soon disappear under the general régime without medication; or, if remedies are necessary at the outset, the medicine may soon be discontinued.

The patient, whether married or single, should occupy his or her own bedroom. Sputum should be received in a vessel containing disinfectant solution of some kind and should be emptied into the drains, if in a large city, or preferably burnt. Underclothing worn during the day should be changed at night. The bowels should be evacuated daily. The patient can easily be instructed to keep his own temperature chart. Where practicable, the weight should be taken every two weeks. It is wonderfully encouraging to the patient to note the decline in temperature and the gain in weight. For obvious reasons the tuberculous patient should not marry, a caution which, especially for female patients, is not as superfluous as it may seem. Pregnancy, with its demands on the mother's nutrition, is a most unfortunate complication; it often renders the condition hopeless for the mother. The child is generally carried to term, but the mother does not rally from the puerperal period and her decline is then very rapid.

What cases are especially suitable for this home treatment? All cases are suitable, even the most desperate. In Nordrach no case is re-

fused because of the advanced stage of the process, and all are treated by the same method. Naturally the best results may be anticipated when the disease is recognized in its incipiency; so that destructive changes over large areas may be prevented; but no case short of being actually moribund need be denied a trial of the method. One case of my own, a young man of twenty-two, whose unusual mechanical talent and great industry made him foreman of a large machine-shop before his twenty-first year, had an attack of pleurisy a year ago, tuberculous pleurisy, doubtless, which left the right lung compressed into the apex of the chest-cavity. At Christmas he had repeated hemorrhages for two weeks. I saw him for the first time early in January. The air-containing space of the right lung was now converted into a cavity, and there was some infiltration at the apex of the left upper lobe. He was coughing constantly, so that he could not sleep; the cough induced vomiting; his night-sweats were very profuse and his temperature was constantly above normal. His home is on one of the hillsides overlooking the valley in which our city lies. Three weeks of open-air treatment wrought a wonderful change; he slept through the entire night; the expectoration which, at the first test, contained bacilli in great abundance, was now reduced to less than half the former quantity; night-sweats had ceased; the fever amounted only to a slight evening elevation; vomiting no longer occurred, the appetite had returned and there was a manifest improvement in strength, color and spirits.[1]

It is upon the general improvement, rather than upon disappearance of bacilli from the sputum, that reliance is mainly to be placed. Experience has shown that tuberculous areas are not destroyed under this plan, though it would seem to favor that process of fibrous inclusion by which extension of the morbid process is arrested; thus following the method of spontaneous cure which Nature, as autopsies prove, accomplishes unaided in many instances. In some cases patients, so far restored as to be able to resume work, have continued to expectorate tubercle bacilli.

There is no worthier cause to which the profession can earnestly devote itself than the care of patients suffering from this disease; there is none in which the results are likely to yield more encouragement to the patient and inmost satisfaction to the physician. Recovery cannot be expected in every case; but it is fair to speak of recovery where the wage-earning capacity of the sufferer is restored, and improvement to this degree may be confidently expected in a number of cases hitherto regarded as condemned without hope.

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[1] Four months have passed since the above was written. The young man is now making models for machinery in a small laboratory in his own home. He climbs the surrounding hills without effort or dyspnea and has gained twenty pounds in weight. No air enters the right lung. The infiltration at the apex has disappeared.

IRITIS.[1]

By J. H McCASSY, M.A., M.D.,
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The iris is the colored membrane which separates the lens and its capsule from the cornea. It floats in the aqueous humor and divides the aqueous chamber into two parts. The anterior chamber is the larger of the two. These two spaces communicate through the pupil. The iris is the only muscular organ that is constantly immersed in liquid.

A more or less constant relation exists between the pigmentation of the cutaneous structures and that of the iris. Blondes will have light and brunettes dark colored irides. To this rule numerous and important exceptions occur. Blue and gray are the predominating colors in the irides of the inhabitants of northern countries. Brown comes next in frequency and this is the prevailing color found in tropical and semitropical countries. Brown being a dense pigment it more nearly excludes the brilliant light found in southern lands. Perfectly black irides are never found. With few exceptions the color of the iris in new-born children is of a light grayish-blue. The stromal pigment, which is the final fixed color of the iris, is not developed until after the third month. Mothers anxiously watch these changes. If the color of the irides of the parents differ, Nature occasionally tries to please both by blending the colors.

In many cases the pigment may not be evenly distributed in the same eye, and unless this fact is known the densely pigmented patch may be mistaken for an old iritic patch. We also find a difference in the color of the two irides; one may be brown, the other blue or gray. It is said that in cases of chromatic asymmetry there is great liability to cataract in the lighter colored eye. Where both irides are known to be of the same color prior to a painful disease of the eye, and upon inspection in after years it is found that in one eye the iris is blue or gray while the other is greenish or brown, this will be evidence of an old iritis or cyclitis. A blue or gray iris appears greenish in iritis while a brown iris appears muddy.

The pupil, the circular opening in the iris, should measure about 4.14 mm. or one-fifth of an inch in diameter. The size of the pupil is influenced by many conditions. It is smaller in old age, in blue eyes, and in hypermetropes; larger in youth, in dark eyes, and in myopes. Contrary to the current notion, the pupil is not in the center of the iris, but a little to the nasal side. The pupil, or rather the pupillary margin of the iris, should be freely mobile. If it is not, it may be attached anteriorly to the cornea or posteriorly to the lens capsule. These attachments are designated anterior and posterior synechiæ respectively.

[1] Read before the Montgomery County Medical Society, May 4, 1900.

Causation.—Iritis furnishes from 3 to 4 per cent. of all ophthalmic cases. When allowed to run its course it is one of the most fatal diseases to sight. In this disease above all others prompt medication has its highest achievements. Medication here is equivalent to a prompt, brilliant surgical operation. Iritis is most amenable to prompt treatment. It occurs most frequently between the twentieth and fortieth year. It is not very frequent during the first fifteen years of life and during old age. It affects men more frequently than women. Syphilis is responsible for 60 per cent. of cases. Rheumatism (articular) causes 10 to 20 per cent. of cases, the remainder being due to various causes such as injury, gonorrhea, gout, diabetes, malaria, etc.

Varieties.—(1) Plastic; (2) serous; (3) parenchymatous. Plastic iritis is by far the most frequent variety met with and is characterized by pericorneal congestion of a grade in proportion to the severity of the disease. As seen by oblique illumination, there is an exudate of organized lymph on the surfaces of the iris. This is very prone to form adhesions. The aqueous humor is not greatly clouded, and the cornea is not spotted. The pain is more intense in this than in the other varieties. The pupil is sluggish and contracted and stubbornly resists the action of mydriatics.

In the second variety the exudate instead of being plastic is serous in character and contains solid elements which usually become deposited in spots on the posterior surface of the cornea. The aqueous is very murky and cloudy. The pupil is not contracted but may be slightly dilated. The tension is often increased, due perhaps to the increased secretion of the aqueous humor or blocking of the entrance to the canal of Schlemm with exudate. As a rule hypopyon is absent. Opacities in the vitreous body are very common. Serous iritis is prone to glaucoma and here atropine should be used with great caution. Paracentesis of the cornea may be repeated to keep down high tension or an iridectomy may be made to avert glaucoma.

In parenchymatous iritis or suppurative iritis, the inflammation attacks the tissue of the iris and instead of the exudate being on the surface of the iris, it is found within. This gives to the iris its characteristic swollen and nodular appearance. The surface appears spongy. This exudate may be extensive. It may suppurate and fall to the bottom of the aqueous chamber in a thick mass known by the name of hypopyon. The hypopyon may undergo absorption in a few hours or in a few days.

Symptoms.—Pain, not so much in the eyeball as in the brow, temple and cheek. Photophobia, lachrymation, pericorneal redness, impaired mobility of the iris, exudation of inflammatory products, and disturbance of sight. These symptoms are common to all forms and types of iritis, and it is not so important to know which form of iritis you have to deal with as it is to be sure you have iritis and not conjunctivitis or glaucoma.

Diagnosis.—Iritis is so intimately associated with cylitis and the treatment practically the same, that it is not necessary at this time to differentiate one from the other. Iritis may be mistaken for conjunctivitis or acute glaucoma. To treat an iritis for conjunctivitis, delaying the use of atropine, the sheet anchor in the former, is a disastrous mistake, but as lamentable as this may be it is still worse to treat acute glaucoma for iritis. The treatment for iritis is most emphatically contraindicated in any form of glaucoma.

In iritis there is found: Hyperemia of the iris; aqueous murky and turbid; iris thick and swollen; pupil contracted and immobile; pain on exposure to light; synechiæ posterior (adhesions); tenderness on pressure; sclerocorneal rosy zone; punctate spots on the cornea; occasional edema and ptosis of upper eyelid; tension slightly increased; hypopyon occasionally; no conjunctival secretion; free lachrymation; vision affected; severe pain in the brow and temple, intermittent or neuralgic in character.

In conjunctivitis there is found: Iris has natural appearance; aqueous clear; no swelling of the iris; movements of the iris free; no dread of light; no exudate nor adhesions; very slight tenderness; uniform conjunctival redness; cornea clear; moderate edema; no increase of tension; never hypopyon; abundant secretion gluing lids together; copious lachrymation mixed with pus or muco-pus; vision unaffected; sandy scratchy sensation in the eye continuously.

It is always difficult to diagnose glaucoma in the early stages. The diagnosis hinges on the tension of the eyeball, and this is always difficult to determine. In acute primary glaucoma (inflammatory), as in iritis, there is pain, photophobia, lachrymation, redness of the sclera and redness of the lids and disturbance of vision. The pupil reacts sluggishly and the iris is discolored. To determine the presence of glaucoma one has to depend on the dilated pupil, severe pain in glaucoma and high tension. Later on the ophthalmoscope will reveal abnormal cupping or excavation of the optic nerve which usually begins on the nasal side.

In order to distinguish rheumatic from syphilitic iritis the following points will be noted. In rheumatic iritis the following symptoms are present: History of articular rheumatism; pain, photophobia, and lachrymation marked; condylomata never observed; exudative changes slight; posterior synechiæ long, thin and non-pigmented; iris often strikingly bright; no pigment spots on anterior lens capsule; not associated with choriodoretinitis; generally perfect recovery of sight; great tendency to relapse; whereas in syphilitic iritis the symptoms are as follows: History of acquired syphilis; pain, photophobia and lachrymation not equally well marked; condylomata present in nearly all cases; extensive

exudative changes; posterior synechiæ short and deeply pigmented; iris often dull and muddy; abundant pigment in anterior lens capsule; choriodoretinitis and blurring of optical disk; sight often impaired; much less tendency to relapse.

Duration.—Iritis or cyclitis may be acute, subacute or chronic. Acute iritis speedily reaches its height and in rare cases runs its course in one week, but the usual duration of acute cases is four to eight weeks, while chronic cases last for months.

Pathological Anatomy.—In diseases of the blood-vessels, due to infection, particularly syphilis, there is a plastic exudation thrown out together with a cellular hypertrophy of the tunica media. This means loss of elasticity and contractility. This new material thrown out is a low grade of tissue, weak in its powers of resistance, and is a favorable site for disease. Where seclusion of the pupil has occurred, atrophy of the iris will take place along the pupillary margin. If the entire posterior surface is adherent, and remains so, sooner or later atrophy of the whole iris will take place. When the undilated iris becomes permanently adherent to the lens capsule around its entire pupillary margin, we have a condition known as seclusion of the pupil. This leads to glaucoma and destruction of the eye, because there is no longer any communication from the anterior to the posterior aqueous chamber.

Occlusion of the pupil differs from seclusion of the pupil in that the communication between the two chambers is not cut off, but the pupil is closed by a diaphragm or membrane formed from the exudate thrown into the pupil. Occasionally, during an attack of iritis the tissues of the eyeball are put upon the stretch and the eyeball becomes elongated or the inflammation may cause spasm of the ciliary muscle. The lens may become thicker or advance. These conditions will change a far-sighted eye to a near-sighted one, but when the iritis passes away, the eye generally returns to its former state of refraction.

Prognosis.—If the pupillary attachments refuse to be broken up, no matter how successful the constitutional medication may be, the future of that eye will be uncertain. Such an eye cannot stand strain and exposure. It is weakened and liable to recurrent iritis and sympathetic ophthalmia. If free dilation of the pupil can be secured and the injury has not been too great, the prognosis is favorable.

Treatment.—Atropine is the sheet-anchor in iritis. It is the great anodyne. It paralyzes the sphincter muscle and puts at rest the mobility of the pupil, breaks up adhesions and puts the pupil back out of the way. Adhesions are not so likely to occur when the pupil is widely dilated. A solution of sulphate of atropine, four grains to the ounce, instilled every hour or two for eight to twelve hours if necessary until the pupil is fully dilated. Then one drop every four hours will usually be sufficient. If poisonous symptoms appear atropine must be stopped for a few days. A calomel purge followed by a saline acts like a charm in iritis. This, with hot baths, lowers the tension of the eyeball.

An inflamed and watery eye with impeded circulation does not present a good surface for absorption, but the application to the eyelids and brow of hot, wet cotton or towels changed every minute will promote circulation, increase absorption of the atropine or other mydriatic, and relieve pain. Smoked glasses screen the eyes from the harsh rays of light and afford more suitable protection than bandaging. If a broken or swollen lens is the cause of the iritis it should be removed; three or four leeches applied to the temple, forehead and side of the nose are very beneficial. The artificial leech may be used, but it has been unsatisfactory in many hands. Morphine, Dover's powder or aconite may be used to combat pain. Both eyes should be allowed to rest. There is no such thing as resting one eye by closing or bandaging it while the other is at work. The too early use of the eyes will cause relapses. For syphilitic iritis, mercury is the remedy. This should be followed by iodide of potassium. The salicylate of sodium and the alkaline carbonates are the mainstay in rheumatic iritis.

Surgical Treatment.—Paracentesis is indicated when the tension of the eyeball is persistently and notably raised; also in large hypopyon or dotted spots upon the back of the cornea, or, when the inflammation refuses to yield to milder means. In seclusion or occlusion of the pupil an iridectomy should be performed as soon as the disease becomes quiescent.

CLINICAL MEMORANDUM.

MERALGIA PARESTHETICA.

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Altogether about a hundred cases of meralgia paresthetica have been reported by various observers. Drs. Musser and Sailer recently collected from literature some eighty-nine cases of the disease to which they added ten of their own.[1] It is only six years ago that the first case of the disease was reported. Bernhardt, who reported the case, had observed the condition some years before in another patient, but did not consider it of sufficient importance to deserve special mention. Other observers, including Musser and Sailer in this country, had observed cases of the affection before Bernhardt called attention to its independent character. A few months after Bernhardt's article Roth published reports

of fifteen cases of the disease. It is interesting to note that of the hundred cases reported about ten per cent. occurred in physicians. There is every probability that the affection is much more common than it might be thought to be from the recency of its introduction to medical literature as a distinct nosological entity. Notwithstanding this there are excellent observers who have been very carefully on the lookout for cases in recent years, yet have seen none. It seems worth the while therefore to report a case that has recently been under observation in Professor Katzenbach's clinic at the New York Polyclinic and which seems to respond very well to the definition of meralgia paresthetica given by Musser and Sailer, *viz.*: "A disturbance of sensation on the external surface of the thigh characterized by various forms of paresthesia accompanied by dissociation and more or less diminution of sensation."

It was in 1895 that Bernhardt[2] described a series of cases all of which were distinguished by the presence of a disturbance of sensation in a smaller or larger area on the outer side of the thigh. Bernhardt is an extremely acute observer. His work in recent years on peripheral nervous diseases has led him to the discovery of a number of symptom-complexes the independent character of which was not realized before. For these he has usually been satisfied to describe the symptoms and point out their coincidence in a series of cases, leaving the naming of the affection to others. The names selected have in at least one other instance besides our present subject been striking. It was Bernhardt[3] who first described the peculiar ache which occurs in the muscles attached to the external condyle as the result of strain or overexertion. The condition is noted in neurotic people who carry a heavy umbrella for a long period or make some other unusual exertion involving these muscles. To this symptom-complex French neurologists gave the name epicondylalgia. The baptism of the sensory symptom-complex on the outside of the thigh was left to a Russian. Roth of Moscow describes fifteen cases of the affection and gave it the impressive name meralgia paresthetica. From the high-sounding title one might be led to expect much of the disease. It really consists of nothing but a painful patch of skin on the outer part of the thigh. It is usually mistaken for rheumatism and our case has been treated as such for a long while. As there is no treatment known that accomplishes any real good in the affection no harm is done in treating it as rheumatism. It might as well be treated by rheumatic remedies as anything else.

The patient was a Polish Jew, about forty-five years of age, who complained of painful, at times hot, feelings on the outer part of his right thigh. Examination showed that besides these subjective symptoms there were certain objective symptoms. An oval patch of the cutaneous surface, about five inches long by about three inches wide, was almost anesthetic when pricked with a pin point. The area of anesthesia was not abruptly defined, but shaded off gradually into the surrounding normally sensitive tissue. In a corresponding area on the left leg there was a patch of slight hyperesthesia. No complaint of pain was made as to this left lateral region and the patient knew nothing of the existence of any symptoms on what he considered his well side until they were demonstrated during the examination. There was some dissociation of sensibility over the area complained of as painful. The man was a cabinet-maker and had to be on his feet most of the day. He used a plane a good deal and his right thigh was constantly rubbed during his work against the side of the work-bench on which the planing was done. It always gave him ease to sit down and his pain completely disappeared on lying down. More discomfort was felt just before a rain-storm than at other times. As soon as rain actually began to fall, however, the discomfort became less marked.

The patient was a neurotic individual with a tendency to neurasthenic symptoms and to general exaggeration of any pains and aches that he had. His knee-jerks were slightly exaggerated. He was inclined to constipation and had evidently suffered for some time from a certain amount of gastrointestinal disturbance. He had been recommended to apply iodine externally and to rub the affected area with chloroform-liniment. Both of these remedies made the condition worse instead of better. He had been treated with the ordinary rheumatic remedies, the salicylates, for a long time, but without relief. The administration of a stimulant nervous tonic seemed to do him some good. Rubbing with simple soap-liniment apparently gave him more relief than any other remedy that had been employed. Perhaps because of this, or because the coming of milder weather brought relief, he passed from observation early in the spring.

It was difficult to find out just when the affection began. When the patient first came under observation in January it had existed for several years, always being worse in the winter time. There was no history of alcoholism in the case, specific infection was denied and there was no good reason to doubt the denial. There was no history of any direct trauma. This part of his leg was, as has been said, continually pressed against the planing-table and this perhaps had something to do with the development of the painful condition. The corresponding patch of hyperesthesia on the other thigh seemed to indicate that another area of paresthetic meralgia was already in process of development on that side.

In most of the reported cases the affection had been symmetrical. For the area of disturbed sensation on the left thigh there was no special feature of his daily occupation that might be considered as an etiological factor. It is probable that the case was one of true meralgia par-

esthetica due, as are most of the other cases of the affection in medical literature, to a neurosis, that is, to a functional disorder of a localized part of the central nervous system. As is pointed out in the article by Musser and Sailer, the affection resembles an occupation neurosis more than anything else. It is true none of the ordinary occupation neuroses are limited to the distribution of a single nerve, as is the case in meralgia paresthetica. It would seem, however, that the true explanation of the affection will come with advance in our knowledge of the neurotic manifestations due to various occupations which have attracted so much attention of late years.

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MEDICAL PROGRESS.

The Liver and Nephritis.—Digestion, nutrition and elimination constitute the normal metabolic processes of the human organism and in the maintenance of these natural functions of animal life the liver plays a most essential part. It is the most important organ of digestion, says G. E. Davis (*Med. Rec.*, September 15, 1900) not only on account of its biliary function in preparing fats for absorption and digestion, but also because of the secondary digestion and elaboration of food products which fall on the liver after these materials have been absorbed into the portal system. It may also be considered the most important eliminative organ in the body, not simply through the bile excretion, but on account of its capacity of transforming the products of disintegration and completing the retrograde changes from non-diffusible colloids into crystalloid diffusible materials before they pass to the kidneys for final excretion. Many investigations have proven the intimate relation between the liver and kidneys. Urea is formed by the liver and returned to the blood to be excreted by the kidneys, and hence an analysis of urine is a good test of the hepatic activity. Renal insufficiency, therefore, proclaims preceding hepatic insufficiency—disturbed nutrition and autointoxication intervening. The kidneys first suffer functional disturbance because the imperfect products are brought to them in a form chemically unable to pass through them, organic change supervening as a result of long-continued irritation occasioned by these incompleted products of metabolism. The indications for treatment, then, in derangements of the kidneys are to aid digestion and nutrition and promote disintegration. Regulation of diet and fresh air are important. Then come the cholagogues and alteratives and often the best diuretic is the drug which arouses the hepatic functions.

Erosions of the Stomach.—The distinction between ulcer and erosion of the stomach mucous membrane was first made by Dr. Einhorn only a few years ago, and even now the differential and diagnostic points of the two considerations are appreciated only by a few. E. Quintard (*Med. Rec.*, September 15, 1900) has reviewed the literature on the subject, showing how the two classes of cases have been confused. By an erosion he means a superficial solution of continuity in the gastric mucous membrane, never extending so deep as the submucosa and the edges of which never present the indurated margins of the peptic or round ulcer. This does not mean necessarily, however, that there are two different processes pathologically. There was loss of flesh, the pain after eating was not very intense, there was considerable exhaustion after exertion, a pinched and haggard look at times, and, finally, that which made the diagnosis positive, the repeated findings in the wash-water of little pieces of gastric mucosa. As far as treatment is concerned, it would seem that excellent results are to be had from the use of a silver nitrate solution, 1-500, sprayed into the stomach by means of an Einhorn atomizer when the stomach is in a fasting condition. After two or three such applications at intervals of two days, the fragments usually cease to appear and the subjective symptoms clear up with a general improvement in the patient. Einhorn has recently used five grains of suprarenal extract for powdering the stomach in these cases with good results. The conclusions are that there are patients who give a peculiar and definite clinical history distinct from that of round ulcer, in whose stomach-washings are repeatedly found small fragments of mucous membrane, varying from 2 to 7 cm. long. They form a distinct class clinically and should be treated as such, but they occur under varying pathological conditions and, hence, the functional signs vary accordingly. As far as the presence of hydrochloric acid is concerned, it may be increased, normal, or much diminished.

Tuberculosis in Infant of Fifty-Six Days.—Any new report of a case of tuberculosis in very early life is always sure to incite new interest in the subject of hereditary transmission of the disease. The infrequency of the disease is well shown by the figures given by J. Comby (*Archives de Médecine des Enfants*, September, 1900) who adds another case to the list. Among 118 autopsied infants from birth to three months of age only one case of tuberculosis was observed, less than 1 per cent.; on the other hand this percentage rapidly increases with the increase in age. The case reported by the writer was that of a male infant, admitted to the Hôpital des Enfants-Malades in Paris, one month old. The mother was tuberculous, the father apparently robust. The child had been nursed by the mother for three weeks, then given boiled cow's milk. When admitted to the hospital the patient was suffer-

ing from gastroenteritis which persisted until death. The autopsy findings showed tuberculosis of the spleen, with advanced tuberculous lesions in the lungs. Comby expresses the belief that this is an example of inhalation tuberculosis in infancy; he sees no evidences of a congenital origin of the disease.

New Technic for Staining Tubercle Bacillus.—Such a variety of staining methods for the bacillus of tuberculosis is in vogue that the selection of any method necessarily depends largely on questions of certainty, adaptation, and preference. In a recent paper Dr. Randle C. Rosenberger (*Journal of Applied Microscopy*, June, 1900) has discussed several of these stains in the light of his own experience. The almost universally employed carbol fuchsin stain, as recommended by Ziehl and Neelsen, is one of the best methods. The method brought forward by Marion Dorset, who claims to have obtained a very good result when spreads were first stained with an alcoholic solution of Sudan III and then decolorized with dilute alcohol, 70 per cent., has been found to be most uncertain, because of the different makes of the stain. Anilin gentian violet is another very good stain, and when a specimen is stained with it, then decolorized with a twenty-five-per-cent. solution of H_2SO_4 and counterstained with vesuvin, a very good picture is obtained. The author believes that most people make the spread entirely too thin; he advocates having a good layer of the material to stain. The method practically recommended is one devised by Rosenberger and used by him for some time with gratifying and reliable results. The essential feature of his method consists in the substitution of sweet spirits of niter as the bleaching agent instead of the sulphuric or nitric acids habitually used. Further, the writer has combined the sweet spirits of niter and methylene blue with malachite green, Bismarck brown, and gentian violet. In this method the preparation is first stained with carbol fuchsin for five or ten minutes; then the mixture is placed upon the spread, after washing off excess of carbol fuchsin for one or two minutes and washed with water. If a green or blue color is not present, place the solution on again and wash with water. In specimens of urine where so much granular debris is present, and in some specimens of old sputum, this method is particularly applicable. The reason is that the niter dissolves out all fatty, granular particles and leaves a clean cut, well-defined field behind. The smegma bacillus is also decolorized with this stain. Where the sweet spirits of niter and the malachite green mixture is used, a beautiful contrast stain is obtained, green being the complementary color of red. In making up the mixture enough of the stain, malachite green or methylene blue in fifty-per-cent. dilute or saturated alcoholic solution is added to the niter to make a deep-green or blue fluid; the same with Bismarck brown. Tubercle bacilli in tissues may be stained by this method, a longer application of the counterstain (five minutes) being needed, however. The specimen is then washed in water, *nearly* dried, and placed in carbol xylol to clear, and finally mounted in xylol balsam. The bacilli are stained red, the tissue a brown, blue, or green, according to the stain used. The advantages claimed for this method are (1) that it is easy to prepare; (2) that it gives a clearer, better defined field; (3) that it does not destroy the tissue, as is sometimes the case with H_2SO_4; (4) that it acts more quickly and surely; (5) that it keeps indefinitely.

Pneumonia Following Laparotomy.—G. Kelling (*Münch. med. Woch.*, August 21, 1900) has often seen pneumonia after abdominal operations, especially those on the stomach, and classifies its etiology as follows: (1) By aspiration during narcosis. (2) By embolism from the ligated vessels, the emboli reaching the lungs through the anastomosis between the gastric and esophageal vessels. (3) By hypostasis. (4) As a result of an epidemic. The prevention will depend on the cause. Where congestion of the dependent portions of the lung is feared the bandage should be applied so that breathing is interfered with as little as possible, the patient should be allowed to sit up after twenty-four hours and exercises his lungs, and digitalis should be given. As far as the embolic form is concerned it is necessary to prevent as much as possible the mechanical aspiration of air into the peritoneal cavity during the respiratory movements and have the air itself pure and free from germs. Since the author has become cognizant of these facts he has built a new operating-room, with improved ventilation, with the gratifying result of not a single pneumonia in twenty abdominal operations.

Pulmonary Tuberculosis and Injection of Nitrogen.—The idea of injecting some gas into the pleural cavity was suggested as a result of the improvement which was observed in other tuberculous lesions when complete rest had been enforced for some time, and furthermore the well marked amelioration of symptoms which had been noticed in several cases following the accidental formation of a pneumothorax was most suggestive and significant. Dr. Murphy of Chicago was the first to urge this method upon the profession of this country and only a few have made any extended experiments to prove its efficacy. H. P. Loomis (*Med. Rec.*, September 29, 1900) reports the results of this form of treatment which he has tried upon eighteen selected cases during the past two years. It is necessary to make sure that the nitrogen is pure and a special apparatus as recommended by Dr. Murphy is most advisable. The gas is usually injected in the eighth interspace unless the lesion is in the lower lobe, when it should be injected in the third or fourth space anteriorly. When many adhesions are present several trials may be necessary or injection may be entirely impos-

sible. One hundred or more cubic inches of gas are usually employed and this amount generally causes a disappearance of all respiratory sounds and considerable displacement of the heart. Permanent beneficial results necessitate that the lungs be kept quiescent for from three to six months, two or three injections usually being sufficient for this period. A constant effect noted after the operation is that there will be a marked increase in the expectoration during the first twenty-four hours, but after a few days this rapidly diminishes. The gain in weight is very constant and even astonishing in amount. Nearly all subjective symptoms are markedly improved but the physical signs do not seem to be much altered. Several cases of persistently recurring hemoptyses were entirely stopped by injections and the author is thoroughly convinced of the efficacy of this method in early cases, with distressing hemorrhages. The best results can be expected from cases of apical unilobar tuberculosis without adhesions, in which the most compression can be obtained. Even the advanced and apparently hopeless cases can, however, be relieved of many of their distressing symptoms, unless the number of adhesions prevents the collapse of the lung. A more extended use of this method is strongly advised, for no bad results or even unpleasant effects have yet been detected. An apparent complete arrest of the disease has been noted in two cases and nearly all have shown decided constitutional improvement. A marked gain in weight has been seen in every case, even in those where the patient had previously been rapidly losing. It is believed that this method of treatment will have a permanent place in the amelioration of the symptoms of pulmonary tuberculosis and it is to be hoped that it will be given a more extended use in order that the kind of cases to which it may be best applied can be ascertained.

Therapy of Iodipin.—According to B. Sessous (*Münch. med. Woch.*, August 21, 1900) there are three convenient methods of giving iodipin. It can be given by mouth in the form of a preparation containing 10 per cent. iodine which allows the detection of iodine in the saliva after as short a period as 10 to 15 minutes; it may be injected subcutaneously, when its action is less rapid although more persistent and finally inunctions may be given, with however less satisfactory results. Iodipin finds its greatest field of usefulness in those forms of tertiary syphilis where the iodides, on account of gastric or other disturbance, are contraindicated. There is as yet a great diversity of opinion as to the size of the proper dose, some advising small, others large doses, but even the largest that it has been customary to give but rarely cause symptoms of iodism. The increase of peristalsis which is sometimes seen can only be regarded as desirable and is due to the fatty nature of the drug. Its use in bronchial asthma and in emphysema also affords advantage.

Stricture of the Esophagus.—While the diagnosis of this condition is usually to be easily and satisfactorily made by means of the esophageal bougie, the use of this instrument is sometimes inadmissible owing to suspected aneurism of the aorta, hematemesis, the weakness or disinclination of the patient, etc. Under such conditions a method described by Holzknecht (*Deutsch. med. Woch.*, September 6, 1900) is likely to be of great value as it gives accurate information regarding the presence, locality, caliber and length of a possible stricture in a simple and painless way that is free from all risk. On illumination of the chest by means of an X-ray tube placed below the right shoulder and with the fluorescent screen arranged so that the line of sight runs from the left behind, forward and to the right the esophagus is visible as a light streak occupying the position between the dark masses of the heart and the vertebral column. On giving the patient a small quantity of water holding in suspension 15-30 grs. of subnitrate of bismuth, if a stricture be present, the fluid will be arrested at this point and a precipitation of the metallic powder takes place which will throw an appreciable shadow on the screen. This test is mainly useful in stenoses of small caliber and if it prove negative the bismuth should be enclosed in a capsule and the process of deglutition observed as before. If this, too, fails it may be well to repeat the experiment having preceded the administration of the capsule by the giving of a small morsel of bread which is sure to be arrested and so impede the progress of the test object.

Cerebral Abscess Secondary to Typhoid.—A. C. Brown (*Edinb. Med. Jour.*, September, 1900) reports a case which is interesting on account of its etiology, the difficulties in the way of diagnosis and the success of the treatment. No instance has yet been recorded in which pyogenic organisms gaining access to the circulation from the intestinal ulcerations of typhoid have been deposited in the brain with the production of a suppurative focus. In this case the patient, a girl of nineteen, developed the symptoms of Jacksonian epilepsy shortly after discharge from the hospital, where she had been treated for a moderately severe attack of typhoid fever. The nervous disturbances were purely motor in character, sensory symptoms and cerebral derangement being entirely absent so that the focal lesion could be definitely located in the right Rolandic area, as the convulsions affected the left arm and leg. The nature of the lesion was more difficult to determine, functional disturbance of the cerebral centers, abscess, tubercle and syphilis were one by one considered and rejected. Against abscess were the position of the lesion, the absence of any exciting cause or rise of temperature (a blood examination was not made), and a provisional diagnosis of a rapidly growing gliomatous tumor was made. On operation, however, the error was recognized and three ounces of pus evacuated, after which the patient made a complete and uneventful recovery.

THERAPEUTIC HINTS.

Castor Oil.—An easy method of administration is to moisten the glass with whiskey, and then pour into it successively:

Glycerin	ʒiij
Ol. Ricini	ʒss
Tr. Cardam. Comp.	ʒi.

This is to be swallowed without mixing.

Acute Posterior Gonorrhea.—The patient is put to bed on a milk diet, the testicles suspended, and the bowels kept open. Alkaline mineral waters and the following formula are given:

℞	Potass. Bicarb.	ʒi
	Tinct. Hyoscyam.	
	Fl. Ext. Kava Kava, aa.	ʒss
	Aq. q. s. ad.	ʒviii.

M. Sig., ʒss in water two hours after each meal and before sleeping.

Relief is obtained from hot-water bags over bladder and perineum, from rectal injections of hot water, or the hot sitz bath; if the vesical and rectal tenesmus resist this treatment, use morphine suppositories. If retention of urine occurs, throw into the urethra a few drops of four-per-cent. cocaine before attempting catheterization. When the acute symptoms subside resume local urethral treatment and allow the patient up. —*J. R. Hayden, Manual of Venereal Diseases.*

Liquor Acidi Phosphorici Comp.—Under this name the late Wm. Pepper frequently prescribed the following:

℞	Calcium Phosphate	gr. xxiv
	Potassium Phosphate	gr. ij
	Magnesium Phosphate	
	Ferrous Phosphate	aa. gr. iv
	Syrupy Phosphoric Acid	♏ 50
	Water to make	ʒi.

Sig., ʒi t. i. d. after meals for an adult.

Emulsion of Linseed Oil.—In certain pulmonary conditions and as a general nutritive, W. H. Thomson prescribes the following:

℞	Ol. Lini	ʒ xv
	Ol. Gaulther	
	Ol. Cinnam.	aa. ʒij
	Ac. Hydrocyan. dil.	ʒiiss
	Glycerin	ʒv
	Syr. Simpl.	ʒx
	Aquæ	ʒxxiv
	Chondrus	ʒss.

Ft. Emuls. Sig., ʒij-ʒiv t. i. d.

Premature Babies.—At the Sloane Maternity Hospital premature babies are either placed in an incubator, or enveloped in cotton, or surrounded by hot-water bags. At first they are given one-half to one teaspoonful of six-per-cent. sugar-of-milk solution every hour, and this is gradually increased by the addition of breast milk until the latter predominates. To promote sucking at the bottle they are made to cry, or their lips are moistened; if they will not suck they are fed by pipette. Gavage is seldom used as they do not stand it well. Incubator babies are kept in the incubator as long as premature, but the others are put to the breast in from three to ten days. If stimulation is needed, oxygen and brandy, a few drops at a dose, are employed. Modified milk, with fat, 1 per cent., sugar 6 per cent. and proteids, 0.33 per cent., may also be given.

Epidemic Conjunctivitis.—According to Hermann Knapp, in this affection the so-called "pink eye," cleanliness and mild antisepsis are the essentials. Among the solutions which may be used are sodium chloride, 1 to 1000; boric acid, 1 to 4 per cent.; potassium chlorate, ½ to 1 per cent.; corrosive sublimate, 1 to 5000, or silver nitrate 1 to 5000. For immediate relief, ice compresses lessen the inflammation and 4 per cent. cocaine removes the gritty sensation.

Anemia.—The anemia of chronic malarial poisoning is especially improved by iron. If enlargement of the spleen and engorgement of the portal circulation coexist, compound jalap powder should precede the iron; or the latter may be combined with resin of podophyllum, as follows:

℞	Quininæ Sulphat.	ʒi
	Resinæ Podophylli	gr. iv
	Ferri Sulphat. Exsic.	gr. xx.

M. Ft. pil. No. XX. Sig., one or two pills three times a day.—*Bartholow in Materia Medica and Therapeutics.*

Treatment of Corns.

℞	Extract of Cannabis Indica	1
	Salicylic Acid	10
	Oil of Turpentine	5
	Glacial Acetic Acid	2
	Cocaine (Alkaloidal)	2
	Collodion, q. s. ad.	100.

M. Apply a thin coating every night, putting each coating on top of the preceding one, until finally the whole drops off, bringing the indurated portion, and frequently the whole corn with it.

Pulmonary Emphysema.—For twenty days out of each thirty take of potass. iodid., gr. xv., aq., ad ʒi. a teaspoonful at each meal. During the other ten days take a tablespoonful of sodii arseniat., gr. i., aq., ʒviij. Take at bedtime every eighth day a two-grain pill of aloes; avoid tobacco, and drink milk.—*Journal de Médecine, September 9, 1900.*

Eczema of the Scalp.—Joseph Max recommends corrosive sublimate, one grain, in one ounce of vinegar, to kill pediculi and remove the nits. This is used twice on the first day, followed for a few days by acetate of aluminum solution to allay the irritation, and then by the following ointment:

℞	Hydrarg. Sulph. Rub.	gr. v
	Sulphur Sublimat.	gr. xx
	Ol. Bergamot	gr. viij
	Vaselin q. s. ad.	ʒi.

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SATURDAY, OCTOBER 6, 1900.

THE BACTERIOLOGY OF THE INTESTINE IN ITS RELATION TO SURGERY.

Few subjects of equal magnitude command more earnest consideration than that of peritoneal infection. In these days when the triumph of highly-developed technic has inspired so many new outlooks in intestinal surgery no subject could possess more fitting interest than the relations of intestinal bacteriology to operative procedures on the stomach and intestines. It has become evident to more than one thoughtful student of surgery that any improvement on the side of infection in this class of cases must be sought for in fuller and more extended studies of the normal and pathological bacteriology of the intestinal tract. An important step which does much to place the whole subject on a more intelligent footing has recently been made by two American investigators, Drs. Cushing and Livingood (Contributions to the Science of Medicine by the pupils of Prof. William H. Welch, 1900), who made an experimental and surgical investigation of the bacteriology of the upper portion of the alimentary canal, with observations on the establishment there of an amicrobic state as a preliminary to operative procedures on the stomach and small intestine.

The investigations of Escherich, Popoff and Szegö have shown that the intestinal tube of infants remains sterile for some hours after birth, the duration of which apparently depends upon the interval elapsing before the earliest nourishment is given. Under ordinary conditions of life micro-organisms make their appearance shortly after birth in all parts of the digestive tract. In many animals the colon bacillus and its near allies seem to be, as in man, the chief obligatory forms. Although the bacterial flora is subject to variations according to the kind of food ingested, Lembke has abundantly demonstrated that the Bacillus coli alone remains constant and independent of diet. Aside from this ever-presiding organism and possibly one or two other forms which Macfayden and Ciechomski have found to be present with some constancy, all the other bacteria should probably be regarded more or less as accidental. And not alone that, but, notwithstanding the number of varieties which may be found at one level or another of the canal, the relative numbers of micro-organisms at different situations retain, during periods or intervals of digestion, a more or less definite proportion. Thus, the observations of Gilbert made upon the intestinal contents of dogs three hours after taking a meal of bread and meat showed an abundance of organisms in the stomach, a pronounced diminution in number in the duodenum, followed by a gradual augmentation to the ileocecal valve, where bacteria flourish in the greatest luxuriance. When the large intestine is reached there is a marked diminution in the numbers, with a slight increase proportionate to the distance from the cecum.

The importance of the stomach secretions in destroying bacteria has evidently been overestimated. The comparative frequency with which varieties of cocci were found in duodenal cultures by Cushing and Livingood tends to confirm this view; and the relative diminution in duodenum observers like Gilbert, Dominici and Escherich believe to be due to the dilution of the chyme by the biliary and pancreatic fluids, rather than to any very marked action on the part of the gastric juice. However this may be, experiments tend to show that there is a tendency on the part of the stomach to completely free itself, together with the end-products of digestion, from even micro-organisms which are resistant to the gastric juice. The normal viscus, then, when empty, is amicrobic; the same is also partly true of the duodenum.

The evidence of all recent studies sufficiently demonstrates that the only way to decrease the number of the intestinal flora is to decrease the number introduced with the food. Thus, on a purely milk diet Gilbert and Dominici found that a striking reduction in the number occurs. The observations of Cushing and Livingood fully attest the accuracy of these results. They further found that with an empty duodenum, during a period of fasting, practically no persisting bacterial elements could be demonstrated. During periods of active digestion, on the other hand, micro-organisms are often present in considerable numbers. Apparently, therefore, a close although temporary relationship exists between the flora of the ingesta and that of the entire digestive tract. The fact that bacteria do not lurk in or upon the mucous surface of the empty canal is one of most eminently practical importance, as will shortly be noticed.

That part of the work of Cushing and Livingood relating to surgical cases, illustrating the foregoing principles and their adaption to intestinal surgery, is of great interest; and will do much to encourage the application of these bacteriological results by other surgeons. Series of surgical cases were placed under varying conditions of diet preliminary to operation and the results of cultures from the bowel afterward noted. They were able to ascertain that when subjected to the ordinary methods of dietary preparation for anesthesia the number was generally reduced, but that in a certain group of cases, at all events, the preparation may not affect the organisms present in the canal and that these may be the cause of the ensuing peritonitis. Most important of all, they showed that by precautionary feeding, it is possible to bring about an amicrobic condition of the bowel with apparent certainty. This applies to a large class of cases, representing states of chronic gastritis from ulcer, carcinoma, dilatations, etc., with a percentage of hydrochloric acid varying from complete absence to a condition of hyperacidity. This amicrobic state is obtained by simple sterilization of all ingesta. The sterilization of the food cannot too strongly be insisted upon under these conditions. Pathologic bacteria are commonly enough found in food; for instance, it is astonishing with what great frequency streptococci may be found in such a universal food product as milk. Eastes (*Brit. Med. Jour.*, Nov. 11, 1899) in 186 specimens obtained from various sources found these organisms in 75.2 per cent. The mouth is rinsed with an antiseptic solution and the teeth are carefully brushed at intervals of a few hours, particular care being exercised before and after eating. When micro-organisms in numbers are found in the stomach-contents after a tested meal the stomach should be washed out morning and evening. Food is best given in small amounts and often from clean or preferably sterile vessels. Boiled water, sterilized milk, beef tea, albumen-water, and similar liquids may be given by the mouth, rectal feeding being substituted if necessary.

The simplicity of the method will appeal to all; its efficacy has been so thoroughly proven in such a large and varied group of cases that the striking results in patients operated upon for intestinal troubles invite prompt trial by all engaged in this kind of surgery. Peritoneal infection as a result of operations upon the stomach and intestines is too perilous a risk not to invite every effort to minimize its occurrence and dangers.

THE PREVENTION OF INSANITY.

Public opinion is only just ready for a discussion of this subject. Very wisely the attention of legislatures has first been called to the more imperative and economic side of the question, the "care" of the insane. The housing and clothing and feeding of the idiot and dement, as well as the confinement of the maniac, have been assumed by the tax-payer; and opportunity has been given to the relatives of these unfortunates to live their lives unhampered by the care of an insane person. This has insured greater care and a longer and more comfortable life to the patient than was generally possible under private care.

A further step has been toward the treatment of acute and curable insanities, and to this end much valuable pathological study of the morbid conditions of the brain has been pursued under State aid. The sociological relations of mental diseases to the community in the matter of ancestry, environment, occupation, and temperament, have been investigated, and alienists now stand in a position to state very definitely some of the most potent causes of insanity and to suggest how the increase of insanity may be prevented.

The increase of insanity must be admitted as a fact. After eliminating the elements which might give a false increase, such as the diminished death-rate owing to better care of the insane, the accumulation of senile cases, the better

means for obtaining statistics, the figures nevertheless show that there has been year by year a distinct *pro rata* increase, which, with a rapidly increasing population, makes a decided increase in the actual number of insane and a constant demand on the tax-payer for their care.

In England and Wales this increase, as reported by the Commissioners in Lunacy, was 3114 on January 1, 1899, over the preceding year. This fact, so startling from a social and economic standpoint, has furnished the text for a very practical and able discussion of the subject in an address on the "Prevention of Insanity" by R. Percy Smith, M.D., F.R.C.P. (Lond.), delivered at the opening of the Section of Psychology at the last annual meeting of the British Medical Association. He holds that the time has come when public opinion must be aroused to reduce the three great causes of insanity, *viz.*, (1) the propagation of the race by those of insane inheritance or those who have suffered from insanity; (2) the influence of alcohol; and (3) the causation of general paralysis by syphilis.

The first cause, "hereditary influence," gives the largest percentage of any cause of insanity and the most difficult to diminish by legal enactment. That there is a popular knowledge of the danger of marrying with insane inheritance is seen in the gossip connected with such marriage and often the wilful suppression of a taint in the family history where the marriage of sons or daughters or property are concerned; and it is well understood that cousins, when there is insanity or serious neurosis in a common ancestor, should not marry; but public opinion should be cultivated to understand the danger arising from the marriage of any two neurotic individuals, and that no person of insane or neurotic inheritance should marry another of insane or neurotic inheritance, even although their own health be apparently sound. It is the duty of the medical profession to advise against such marriages, and to point out the almost inevitable fatal result in the offspring.

With reference to the marriage of persons who have suffered from an attack of insanity, a prohibitive legislature would doubtless do much for the community. Such an enactment is in force for congenital imbeciles and chronic epileptics in some communities and should be made universal; but as the danger in such cases is more glaring and asylum restriction careful, there are not as many unsound offspring from such individuals as from the marriage of persons who have been temporarily insane. Medical opinion should forbid absolutely the marriage of any one who has suffered from an attack of insanity, and should advise against childbearing in women who have had attacks of puerperal mania due to inherited neurosis.

Next to direct inheritance, alcohol counts for the most potent influence in the causes of insanity. The alcoholic insane form about one-quarter of all admissions to asylums in England. They are generally the most dangerous and difficult to manage and in private life do the most harm. Many who are not included in the statistics of the insane are temporarily unsound and are free to abuse their families, ruin their health, and produce offspring of such neurotic tendencies that they are almost sure to join the ranks of the alcoholic insane in the next generation.

This is a matter in which careful legislation might aid the cause of society. Drunkenness, habitual or intermittent, when it interferes with the laws of society, should be subject to compulsory detention and treatment as much as insanity. "Even those," says Dr. Smith, "who hold the liberty of the subject so sacred as to wish to leave the alcoholic to drink himself to organic disease or insanity and his family to poverty might at least turn their attention to the fact that nearly a quarter of the insane are so either wholly or in part from a wholly preventable cause, and that in a large proportion of these cases the tax-payer has to bear the expense."

There seems to be no logical reason why legislature should not take as severe steps to prevent the spread of so ravaging a disease as syphilis as it does of measles or smallpox. If there were no syphilis, it is pretty safe to say there would be very little general paralysis, and another large and preventable cause of insanity would be eliminated. It is the opinion of Dr. Smith that if syphilis were made a notifiable disease, and the chances of its spread diminished, we should see a corresponding diminution in the number of cases of general paralysis, which ought to be looked upon as a truly preventable disease. As a proof of this statement it might be noted that in Finland, as the result of the hospital treatment of syphilis and the power given by the legislature enabling the compulsory examination of any suspected individual, syphilis has much diminished in the course of twenty years.

In our large cities where syphilis, alcohol, and fast living are most rife and where, in consequence, general paralysis occurs most frequently, it would be difficult at present to legislate these causes of insanity out of existence; but it would

be a long step toward improvement to get the public to realize that insanity is not an "affliction of the Almighty" or a "mysterious dispensation of Providence," but a disease which in most cases individuals bring upon themselves, or with their eyes open, hand down to their children.

If our race is to hold its own in the struggle for existence with other nations, it must not be reproduced by the individuals of weak nervous systems and degenerate or alcoholic types that are at present filling our asylums. The legal and forcible detention of all such by the State, with prohibitory marriage laws, will doubtless help the next generation; but medical advice and teaching to arouse public sentiment must do the rest.

THE MALARIAL EXPERIMENTS.

Newspapers of a certain class exploit so many discoveries in science, with so little regard for accuracy, that we are tempted to believe that they do it for the sake of making double copy in overthrowing the rumors that they have started.

But for once some of the English and Continental journals have overreached themselves and have begun to report exaggerations where none existed, and to deny the truth of conclusions that were perfectly just concerning the experiments to test the mosquito theory of malaria in the Roman Campagna.

As is well known, Dr. Luigi Sambon and Dr. G. C. Low, both connected with the London School of Tropical Medicine, have been living since June, 1900, in the malarial valley near Ostia, where the pestilence is so great that travelers who merely spend a night there generally contract the disease. They have lived in a mosquito-proof hut, and have not taken any quinine or other drugs preventive of malaria, with the result that neither they nor their attendants have had any symptoms of the disease. Nevertheless a report that the experiment had proved a failure was being widely spread to the public, until the *British Medical Journal* promptly settled matters by telegraphing for direct information. The following reply was received by the London School of Tropical Medicine:

Rome, 13 Sept., 6.25 A. M.

To Manson, Finically, London.

Assembled in British mosquito-proof hut having versified (verified) perfect health experimenters amongst malarial-stricken inhabitants, I salute Manson who first formulated mosquito theory. Grassi.

The experiment at this date had still six weeks to run before the malarial season—and the mosquitoes—would disappear, but the demonstration of the formula "No mosquito, no malaria," seems to be satisfactory.

In further proof of it, Dr. Elliott, a member of the Liverpool expedition sent to Nigeria some time ago to investigate the subject of malarial fever, reported on his return that the members of the expedition had spent four months in some of the most malarious places, marshes and lowlands that were considered the most deadly. They had taken no quinine, but had carefully used mosquito nets at night, and not one of them had contracted the fever.

The positive side of the experiments on the mosquito theory of malaria is no less authentic and interesting. Dr. Manson's son, who had not been in a malarial district for many years, offered himself for experiment, as a complement to his father's work. He allowed himself to be bitten by mosquitoes that had been carefully brought from Rome, where they had been fed on the blood of a malarial patient. He contracted malaria of the double tertian type and the organisms were found by microscopical examination in his blood. The whole experiment was conducted and verified by scientific men; so that there remains no doubt but that the mosquitoes carried the organism from Rome to London. A similar experiment made in Bellevue Hospital, New York, gave like results. A young man permitted himself to be bitten by mosquitoes that had been fed on the blood of a malarial patient, and six days later began to show signs of malarial infection. While these observations of Berkely have not been carried to their final stages, the evidence already adduced by him tends in large part to substantiate the observations of Manson and of Ross. Anopheles claviger is not an uncommon form of mosquito with us and our experimenters have ample opportunities for investigating the truth of Manson's claims.

This discovery, while not wholly solving the malaria problem, is nevertheless undoubtedly true, as far as it goes. Mosquitoes are one of the main causes of malarial infection. The benefit to mankind of the work that has been done by scientific men who have been laboriously working out these experiments for the last few years is too great to be estimated, and it is grievous to have the much-believing public ready to accept their conclusions with an incredulous smile born of many previous deceptions.

ECHOES AND NEWS.

NEW YORK.

Dr. Doremus' Golden Wedding.—Dr. and Mrs. R. Ogden Doremus celebrated their golden wedding October 1, 1900.

New York Neurological Society.—At the last regular meeting of this Society, held October 2d, Dr. A. R. Defendorf read a paper on "Periodical Psychoses;" Drs. L. P. Clark and T. P. Prout on "Status Epilepticus: Its Nature and Pathology."

Gouverneur's New House Surgeon.—Dr. Frank P. Leadley, for the past two years house surgeon of Gouverneur Hospital, last week formally turned over the institution to his successor, Dr. Agnew H. Hilsman. The former will take up the practice of his profession in Rochester, N. Y.

Academy Notes.—Medicine once more takes on its wonted activity in this city after the summer's holiday. The Academy had its first general meeting, Thursday, October 4th, at which Dr. Jacobi read his complete report on "Infant Feeding," which was presented in abstract at the Thirteenth Medical Congress. Monday, October 8th, the Section on Surgery meets. Papers by Drs. J. F. Erdmann and A. B. Johnson will be read. New instruments will be shown by Drs. Willy Meyer and Carter Cole. On Thursday, October 11th, the Section on Pediatrics presents a discussion on the subject of "Antitoxin in Diphtheria." Papers will be read by Drs. H. F. Koester, W. H. Park and J. H. McCollom. Discussion by Drs. J. W. Brannan, W. P. Northrup, W. C. Deming, L. K. Neef and C. S. Benedict.

Insanity at Elmira.—An alarming increase of insanity among the convicts at the Elmira Reformatory has been reported to State Superintendent of Prisons Collins since March last, which period marked the close of the Brockway administration. Since March sixty-five insane convicts have been transferred from that institution to the State Hospital at Matteawan. The State prison authorities cannot account for the increase. The interpretation of this report is probably as follows: Many of the patients there were suffering from some form of mild psychosis, moral dements, paranoiacs, etc. Coming under a physician's eye their mental irresponsibility has been recognized and hence they have been transferred to the proper institutions.

Bellevue's Undesirable Help.—Inspector Robert W. Hill has published his report on visitations to the public hospitals and almshouses within the First Judicial District, which comprises the boroughs of Manhattan and the Bronx. The most interesting feature of the report, which is submitted to the State Board of Charities, is its sharp criticism of the present "poor help" system which is in use in the Bellevue Hospital and several other charitable institutions. Much of the coarser kind of work is done, not by regularly paid employees, but by men and women who are without a home and who are glad to obtain shelter and food in return for their services. The inspector found fifty-one women of that class located in an attic in one of the pavilions of Bellevue Hospital. On a stand in an antechamber he found seven empty whisky bottles, which had been smuggled in by the women the night before. Speaking of this kind of help, the inspector says: "These persons would be better off if sent over to the almshouse and the work which they are supposed to do given to paid employees. If better quarters were provided for the help, it would be possible to secure a better class, but so long as their present dormitory system continues the class of help will continue undesirable."

Dr. Lewis A. Sayre.—At a special meeting of the Executive Committee of the New York County Medical Association, held September 24, 1900, the following resolutions were unanimously adopted:

Whereas, It is our sad duty to announce the death on September 21, 1900, of our late associate, Dr. Lewis Albert Sayre, one of the founders of the American Medical Association, and its President in 1880; therefore be it

Resolved, That we place on record our high appreciation of the valuable services which he has rendered to medicine and surgery during his long and useful life;

Resolved, That his daring originality, his freedom from surgical traditions, along with his unflagging enthusiasm and interest in everything pertaining to his beloved profession, constituted him a teacher of rare excellence, whose pupils will cherish his memory long after the voice of their preceptor is hushed;

Resolved, That we extend, in the name of the members of the New York County Medical Association, our heartfelt sympathy to the afflicted relatives, and direct that a copy of these resolutions be sent to the family and to the medical journals.

Obituary.—Dr. Samuel Smith Purple, one of the early presidents of the New York Academy of Medicine and founder of the library of that institution, died at midnight Saturday at his residence, 36 West Twenty-second Street, from heart trouble, after a short illness. Dr. Purple was born in Lebanon, Madison County, N. Y., June 24, 1822, and was graduated at the medical department of the University of the City of New York in 1844. In 1846-48 he was physician at the New York City Dispensary, and was ward physician under the Board of Health during the cholera epidemic of 1849. He was vice-president of the New York Academy of Medicine from 1870 to 1875 and its president from 1876 to 1880, and was made second vice-president of the New York Genealogical and Biographical Society in

1888. He is the author of a large number of medical works. Dr. Purple's presentation of 4000 volumes to the New York Academy of Medicine was the beginning of that institution's library. At the time of his death he owned one of the largest private libraries in New York. Dr. Purple was unmarried.

Brooklyn Crowded.—The new census is showing many interesting facts relative to congestion of population. Taking the figures of the tenement-house population in Brooklyn, supplied recently by Dr. Byrne of the Health Board, and which had to do with 574,950 persons, or 49.2 per cent. of 1,166,582, Brooklyn's population, it is found that there is an average of 18.1 persons to a dwelling. To-day half of Brooklyn is housed as densely as Manhattan's population was in 1890. In that year Manhattan's entire population was housed at an average of 18.52 persons to a dwelling. It is seen that while Manhattan is yet the leading area of the world in the intensity of its housing problems Brooklyn is at least second in America. Figures obtained from the Department of Buildings in the boroughs of Manhattan and the Bronx show that the number of persons to a dwelling in Manhattan at the present time is 23.2.

PHILADELPHIA.

Scored by Coroner.—At an inquest over the body of a suicide recently the Coroner severely scored a morbidly curious man. The latter had gained access to the house by representing himself as a deputy from the Coroner's Court.

Water Company Arraigned.—The Springbrook Water Company of Wilkes-Barre has been charged with violating a city ordinance by furnishing impure water. Forty citizens, including councilmen and physicians, testified against the Company. The penalty is $100 for each day.

Epidemic of Diphtheria.—Diphtheria is epidemic in Millville, a suburb of Altoona. The State Board of Health was appealed to, but refused aid because of lack of funds.

Philadelphia Almshouse.— The Board of Charities and Correction has decided to add four graduates in dentistry to the staff of residents at the Almshouse. One is to be chosen from each of the four schools of dentistry here. They are to receive no salary.

New Society of Nurses.—The Philadelphia Society of Graduate Nurses has been organized and chartered under State laws with Joseph Haines as president. The object of the Society is to elevate the standard of nursing and to furnish the public with first-class nurses.

Whipping Post for Wife-Beaters.—The September Grand Jury has recommended the reestablishment of corporal punishment for wife-beaters. The members are also of the opinion that houses of refuge and reformatories for incorrigible boys do not tend to make good citizens, and recommend discharge with a caution for the first offence and punishment in the shape of a sound thrashing for succeeding offences.

Druggists Aroused.—The druggists of this city are aroused over what they call an unwarranted investigation of their affairs by the State Pharmaceutical Examining Board. A special agent of the Board is endeavoring to ascertain the competency of drug-clerks and also the cautions observed in the sale of poisons It is believed that an effort is to be made to have the Legislature pass more stringent laws governing the sale of drugs.

Public School Hygiene.—School-teachers and janitors are wondering how they will enforce all the rules lately promulgated by the Board of Education, among others are the following: Teachers should forbid spitting on the floors. Children should be discouraged from eating candy at recess. Children should be required to put on overgarments during recess in cold weather, and urged to go into the open air. When a child appears with a soiled skin a note should be sent to the parents calling attention to that fact. The sanitary care of the houses is strictly enjoined.

Changes in Medical Schools.—The various medical schools of the city opened October 1st. The new year at the Medico-Chirurgical is marked by the completion of the new laboratory and dispensary building. The faculty of Jefferson has recommended that a laboratory of clinical medicine be established in connection with the proposed new hospital, the laboratory to be known as the J. M. Da Costa Memorial.—Dr. H. F. Harris has resigned the associate professorship of pathology.—At the University of Pennsylvania the first-year classes in medicine and dentistry are smaller than usual because of increased entrance requirements. Provost Harrison stated that the teaching of medicine was to be based upon scientific considerations instead of being viewed from a commercial standpoint. A radical departure in the medical curriculum is the confining of anatomy to the first year and physiology to the second year only, instead of extending both over the two years.

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1901, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the Secretary of the College on or before May 1, 1901. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within

the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award.

The Alvarenga Prize for 1900 has been awarded to Dr. David De Beck, of Cincinnati, Ohio, for his essay entitled, "Malarial Diseases of the Eye." Thomas R. Neilson, M.D., Secretary.

CHICAGO.

Norwegian Hospital.—The medical staff of this institution has founded a library for the use of patients and attendants. It consists of 500 volumes and represents an outlay of about $1000.

South Chicago Hospital.—This will soon be opened. A house containing thirteen rooms has been purchased and is now being renovated and prepared for patients.

Appointment of Dr. Pennington.—Dr. J. Rawson Pennington has accepted the Chair of Rectal Surgery in the Chicago Policlinic. Formerly he held a similar position in the Chicago Clinical School. He will assume his duties at once.

Appointment of Dr. Parker.—Dr. William R. Parker has been appointed Commissioner of Health of Evanston, to succeed the late Dr. A. B. Clayton. The appointment was confirmed by the City Council.

Illinois Medical College.—At the Sixth Annual Commencement of this College, recently held, nineteen men and one woman received the degree of Doctor of Medicine. The degrees were conferred by President Randolph N. Hall, after which the Doctorate Address was delivered by Professor Robert H. Walsh.

Metropolitan Medical College.—On the petition of Attorney-General Akin, Judge Haney has issued an injunction restraining the officers of this institution from conducting its business in violation of the terms of the charter. At the final hearing of the suit the Court is asked to dissolve the corporation, which is declared to have conducted a fraudulent business and abused and violated its charter since its organization in September, 1896. The basis of the petition is that the college, while advertising that it is a legitimate institution, does not require personal attendance of applicants for the degree of Doctor of Medicine. The specification states that "this system of conferring degrees is dangerous to the health of the people, is a usurpation, misuse and abuse of the power conferred upon said college as a corporation."

Injurious Desks.—Acting under the directions of Dr. W. S. Christopher of the Board of Education, the child-study department has taken up the question of desks and the effect of the present accommodations on the health of the pupils is being carefully investigated. The Committee will probably present a report in a few weeks. If it is not favorable to the desks now in use, a strong effort will be made to change them.

Dentists Poisoned at a Dinner.—Twelve of twenty-four members of the Delta Sigma Delta fraternity were poisoned by food eaten at a dinner September 29th. Canned salmon is thought to be the cause of the ptomain-poisoning. Although some of the men are still in a serious condition, it is not thought any of the cases will prove fatal. All afflicted are dentists. Commissioner Reynolds of the Board of Health has secured samples of the food eaten for chemical analysis. The salmon was obtained out of town, and it believed to be a lot from a burned cold-storage plant at St. Paul that was suspected. The Health Department has been trying to keep it out of Chicago.

GENERAL.

Huxley Lecture.—Lord Lister delivered the Huxley Lecture for 1900 at St. Martin's Town Hall on October 2d.

University of Glasgow.—The Chair of Clinical Medicine at the University, made vacant by the promotion of Dr. McCall Anderson, an appointment for life with fees and salary aggregating $1170, is being eagerly sought for by the following candidates: Drs. James Finlayson, Samson Gemmell, G. S. Middleton, J. L. Steven of Glasgow and by D. A. Morison of London.

European University News.—Dr. Constantin Savas has been appointed ordinary Professor of Hygiene and Bacteriology of the Athens medical faculty.—Breslau University has elevated Dr. Richard Stern from private-docent to extraordinary Professor of Internal Medicine.—At the University of Copenhagen Dr. Oscar Wanscher has been promoted to extraordinary Professor of Surgery.—Dr. Oscar Schulz has been appointed private-docent in Physiological Chemistry at the University of Erlangen.

Cuyahoga Ohio County Medical Society.—At the October meeting of this Society a symposium on appendicitis will be held. The following papers are to be read: "Etiology of Appendicitis," Dr. Guy H. Fitzgerald; "Diagnosis of Appendicitis," Dr. Charles B. Parker; "Diagnosis of Appendicitis," Dr. Charles G. Foote: "Medical Treatment of Appendicitis," Dr. L. B. Tuckerman; "When Shall We Operate," Dr. Frank E. Bunts; "Operation in the Interval," Dr. N. Stone Scott; "Operation During Attack," Dr. Geo. W. Crile; "Complications During Appendicitis," Dr. Morris Stepp; "Appendicitis and Typhoid Fever," Dr. Charles J. Aldrich; "Appendicitis in Children," Dr. Joseph V. Kofron; "Appendicitis and Pelvic Disease," Dr. R. E. Skeel: "When Do I Call the Surgeon?" Dr. J. H. Lowman; "Hernia Following Operation for Appendicitis: Causes and Means of Prevention," Dr. Carl A. Hamann.

Woman's Medical Fraternity.—The Syracuse Society retracts its claim to be the first woman's medical fraternity.

Asphyxiation in an Asylum.—Ten inmates of the insane ward of the Lowell (Mass.) city farm narrowly escaped asphyxiation by gas at an early hour September 29th.

Morphine Habit in a Dog.—An Irish setter owned by a physician of Philadelphia was recently run over and had his back severely injured. Feeling sure the dog would die, the doctor began to experiment with morphine. One morning he forgot to give the dog its injection. It crept into the office and lay at the doctor's feet. He was unable to understand its queer antics. Finally it crawled to the medicine chest from which he had taken the morphine, and, looking up at the chest, it began to whine. The doctor wondered if the dog was really trying to make him understand that it wanted its injection. He took the hypodermic from the chest. When the dog saw the syringe, the report says that it barked gladly and lay on its back, whining for the doctor to inject the drug.

Beer for Hiccoughs.—Hiccoughs bid fair to become as popular a malady in prohibition districts in Kansas as snake-bites have been in the past. After hiccoughing without intermission for 100 hours Dr. H. A. Pickerel of Beverly was brought to Salina, and twenty-two hours later he was cured of his trouble by a bottle of beer.

Medical Society of Missouri Valley.—This Society held its annual meeting at Council Bluffs, Iowa, September 20th. Three sessions were required to complete a most interesting program, and later, at the Grand Hotel, the members gathered around the festal board, where they recuperated from the labors of the day. The Society voted to contribute $25 to the Rush Monument Fund, and a resolution was adopted providing for a banquet after each meeting. The following officers were elected: President, Dr. V. L. Treynor, Council Bluffs; First Vice-President, Dr. B. B. Davis, Omaha; Second Vice-President, Dr. F. E. Sampson, Creston; Treasurer, Dr. T. B. Lacey, Council Bluffs; Secretary, Dr. Chas. Wood Fassett, St. Joseph. The next meeting will be held March, 1901, in Omaha.

Cider as a Cure of Gout.—The largely increased consumption of cider far away from the producing counties, to which it was almost confined a few years back, shows, at all events, that a good many people prefer a less heavy drink than beer. But the enthusiastic advocates of the West Country beverage begin to advance far more ambitious pretensions on its behalf. Not only do they proclaim it an antidote to gout, and relate how a certain Royal Duke once cured himself of that disorder by restricting himself to pure Devonshire cider, but the pleasant tipple is represented as having remedial effects in many other diseases.

Poison Ivy.—Dr. Pfaff of Harvard has investigated the poison of *Rhus radicans* and finds it to be a non-volatile oil, present in every part of the plant, which cannot be washed off the skin with water alone. It is said that a remedy has been discovered in the form of a saturated solution of alcohol, of 50 to 75 per cent. strength, and sugar of lead; and that its efficacy has been tested by the Department of Agriculture.

Yellow Fever.—A board of officers, consisting of Major Valery Havard, Surgeon, and Major William C. Gorgas, Surgeon, United States Army; Surgeon A. H. Glennan, United States Marine-Hospital Service; Dr. Augustin Varona, Dr. Vincente Benito Valdes, and Acting Assistant Surgeon T. C. Lyster, has been meeting at Havana, Cuba, for the purpose of inquiring into and reporting upon the feasibility and advisability of establishing a detention camp near Triscornia, Cuba, for the detention of immigrants who arrive at Havana, in order that the spread of infection may be prevented.

Pan-American Medical Congress.—The third meeting of the Pan-American Medical Congress, as already announced in the Medical News, will be held in Havana, Cuba, December 26, 27, 28 and 29, 1900. Invitations from the Secretary of the Executive Committee have been received and members are urged to specify their intention of going to the Congress and further asked to forward the titles of papers to be read to Dr. T. V. Coronado, Prado 105, Havana, Cuba, Secretary of the Committee on Organization.

The Cause of Temperance.—A British temperance journal has been publishing a prescription for "a substitute for brandy" in cases of faintness or severe pains. It consists of "equal parts of the strongest tincture of ginger, sol volatile and chloric ether." Temperance people have had the recipe printed on cards and distributed with the injunction: "Pass it on." The *Lancet* points out that brandy usually contains about 50 per cent. of alcohol, whereas of the temperance ingredients the tincture of ginger is essentially pure alcohol, the sol volatile contains alcohol in the proportion of 6 parts out of 9½ and the chloric ether has 95 per cent. of alcohol. The mixture, therefore, contains 83 per cent. of alcohol compared to 50 per cent. in brandy, and is, no doubt, extremely efficacious.

Cost of Medical Education in London.—According to the *Lancet* the minimum sum a student must be prepared to spend in London during a year on board and lodging is $300. He can, however, save 20 per cent. of this expenditure by living with a fellow-student. He must be prepared to spend at least $50 more in books and instruments. He will be almost the exception if he does not incur one or two extra liabilities in the way of special tuition during his five years' career. He will require another $50 for pocket money, and to these figures must be added his

fees and the price of his clothes. "We do not think that in London any young man should be asked to attempt to maintain himself and pay the necessary fees and expenses of his medical education upon a less sum than $500 a year. If a student cannot command personally, or by allowance from his parents, $500 per annum, and look to receiving it regularly for at least four out of the five years of his curriculum, we consider that he is rash, in these exacting days, to embark upon our profession."

The "Salt-Lake."—At Odessa the so-called Limancure is becoming popular. The Limans are sheets of water originally connected with the sea, but which have been isolated and converted into salt lakes. Owing to evaporation their waters have become concentrated, and are thought to possess considerable therapeutic value. There are three of these Limans near Odessa. The principal salts they contain are the chlorides of sodium, potassium, and magnesium; calcium sulphate and magnesium, or sodium bromide. Their bottoms are covered by a black slimy substance composed of a sponge of animal and vegetable matter impregnated with salt water, and contains iodine, bromine, sulphur, sulphuretted hydrogen, and oleic and valerianic acids. Patients bathe either in the open lakes or in baths with the water at various temperatures and degrees of concentration. They also have slime baths. The diseases treated are chronic rheumatic affections, scrofula, rickets, stiffness of the limbs, and certain chronic skin diseases. Considerable discomfort (depression of spirits, digestive disturbances, palpitations, etc.) is frequently experienced at the beginning of the cure, but soon passes off.

The Plague in Egypt.—The Sanitary Department of the Ministry of the Interior at Cairo has just issued a report on the plague in Egypt, covering the period from May, 1899, to July, 1900. It begins with a full account of the outbreak in Alexandria, which began in the first-named month and the last case of which occurred on the 5th of the November following. In all 96 cases became known to the authorities, and it was estimated that 27 more, of mild character and followed by recovery, might possibly have escaped notification. These 96 were made up of 66 natives and 30 foreigners, the latter mostly Greeks, Frenchmen, or Italians employed in groceries, bakeries, wine shops, or at restaurants. The mortality among reported cases was 48 per cent., and there was reason to believe that no death from plague escaped notice. The precautions taken for arresting the course of the disease appear to have been admirably devised and conducted, and are set forth under the three heads of: (1) Measures to assure prompt discovery of each case of plague, and of all suspicious cases; (2) direct measures to prevent the propagation of the disease from individual cases; and (3) indirect measures, such as general cleansing of dirty quarters, with a view to eliminate all conditions favorable to the existence or propagation of the disease. A sum of £30,000 (Egyptian) was granted by the Caisse de la Dette to defray the extra expenses, and was placed at the disposal of the Director-General of the Sanitary Department, but the total outlay exceeds this sum by £4000 (Egyptian), and the whole of the work required is declared to have been carried out with great discretion and tact, and with the minimum of offense to religious or other susceptibilities of the natives.

Cancer in Germany.—The Prussian Government has initiated systematic inquiries with a view to amplifying the world's knowledge on the subject of cancer. Every registered physician has received a paper of questions calling upon him to give his experiences in cancer cases. The principal points are whether cancer is hereditary and contagious, whether it is connected with a particular habit, such as indulgence in alcohol, tobacco, etc., or whether it is more prevalent in one district than another.

The Plague at Glasgow.—New developments concerning the plague situation at Glasgow indicate the gradual abatement of the epidemic. About five new cases have been reported during the past week. All of these occurred in suspects and were immediately isolated.

CORRESPONDENCE.

INFECTION AND INTOXICATION.

To the Editor of the Medical News:

Dear Sir: I have read with profit the interesting and suggestive communication by Dr. Eugene Wasdin on "Toxicity versus Septicity in the Infectious Pathogenic Bacteria," and wish merely to make a plea for the abandonment or, at least, the more qualified use of the terms "sepsis," "septicemia," "sapremia," and their derivatives, as being vague and indefinite, if not actually ambiguous. These words came into use at a time when our conceptions with regard to infection and intoxication were much more crude and less sharply defined than they are at present, and they were indiscriminately applied to both of the states mentioned, but now, when it has become so important to appreciate their differentiation, the necessity for precision in expression must be obvious. "Infection" may be defined as "a condition dependent upon the lodgment and activity of parasites in or upon the body." It may be local or general, and in the latter event, when the parasites are bacterial, the designation "bacteremia" may be employed. "Intoxication" or "toxemia" may be due to the products of bacterial activity, to the retention in the body of products of abnormal metabolism, qualitatively or quantitatively, or to the introduction of poisons from without.

Augustus A. Eshner.

Philadelphia, October 1, 1900.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, September 22, 1900.

THE PLAGUE IN GLASGOW—SANITARY PRECAUTIONS—THE OUTBREAK SUBSIDING—PRECAUTIONS IN LONDON—DEATH OF SIR J. B. LAWES—THE HOSPITAL COMMISSION IN SOUTH AFRICA—MR. TREVES ON THE HORRORS OF WAR—DEATH FROM A BEE-STING.

Although a large amount of attention has been devoted to the outbreak of plague in Glasgow, its source has not been definitely ascertained. All that is known is that the man in whose house the first case occurred worked as a dock laborer exclusively in vessels trading with home ports. He became ill after his wife and grandchild had died, presumably from plague, and may have been infected from them. They were supposed to be suffering from "acute gastroenteritis" and "zymotic enteritis" respectively. The man became ill on the day following his wife's funeral, which took place on August 11th. In a house in a neighboring street the disease suddenly developed in a family which had visited the first during the illness. A child aged ten years was taken ill on August 19th and died on the 21st. The doctor who was called in ten minutes before death diagnosed "acute pneumonia." On the 20th the mother, on the 22d a brother, and on the 23d a half-brother, aged three became ill. The two doctors who attended the patients were puzzled as to the nature of the disease. They regarded it as certainly infectious and notified it to the health authorities as possibly typhoid fever. In the cases of the dock laborer and the subsequent ones the disease proved to be plague, the bacillus being found in all. The patients were removed to hospital. In another neighboring street a woman who had recently been confined was taken ill on August 25th with symptoms resembling those of typhus fever, but the case proved to be one of plague. She had associated with the first family during their illness. A search was made in the houses in which the disease occurred and two other cases were discovered. All the persons who had visited these houses (80) were removed to reception-houses of the sanitary department. Four subsequently developed plague. Two other cases were found in houses near those in which the disease had occurred in men who appear to have been in contact with the patients. Most elaborate precautions have been taken by the authorities to check the spread of the disease. The district in which the outbreak occurred has been placed under special sanitary rules. Ashpits will be emptied three times a week and washed once weekly with chloride of lime whitewash. Dirty back courts will be hosed every night with chloride of lime solution. A special inspection of the district has been organized for the detection of dirty and overcrowded houses. The occupants of infected houses and all those who have been in contact with patients will be offered inoculation with Yersin's serum; those living in the neighborhood, with Haffkine's prophylactic. The nurses in charge of the cases have already been inoculated. Ratcatchers have been employed to clear the district of rats. A rather alarming fact is that a fatal case has occurred in the adjoining burgh of Govan on the south of the Clyde immediately below Glasgow. Clinically, the disease has manifested itself in three forms, (1) cases with solitary bubo; (2) cases in which several groups of glands were involved, and (3) mild cases which could not be recognized but for the history of infection. Should any cases of plague occur in London the Local Government Board is well prepared to combat the disease. At the British Institute of Preventive Medicine there is a store of Haffkine vaccine for inoculating suspected persons and arrangements for isolation have been already made. Every vessel arriving at the port of which the slightest suspicion is entertained is boarded and inspected by the sanitary authorities. The official bulletin issued at Glasgow shows that the position is as follows: In hospital suffering from plague 13, suspected 1, in reception-houses under observation 111. As the maximum period of incubation is fourteen days, it is now hoped that the outbreak has spent itself. The last report raises the cases in hospitals to 16 and the persons under observation to 112.

The death is announced of Sir J. B. Lawes, the great agriculturist, who a lay paper declares has done more good for his country than the whole race of politicians. To him more than to any other man was due the wonderful change that has taken place in agriculture during the past sixty years. He introduced the process for converting bones into soluble phosphatic manure. In conjunction with the celebrated chemist, Dr. Gilbert, he carried out a number of important feeding experiments on live stock which have been extensively quoted in physiological works. They invented a number of different manures to be used according to the nature of the crop to be raised, corn, barley, oats, or grass. The ingredients consisted of varying quantities of potassium, sodium and magnesium sulphates, superphosphates and ammonia salts. The wonderful effect of these manures is shown by the fact that in one case where the wheat manure was used the average yield was 59 bushels of corn and 41⅛ cwt. of straw per acre, whereas the unmanured plots of the same land only gave 19⅞ bushels of grain and 10¾ cwt. of straw.

The Hospital Commission has held sittings at Bloemfontein. Major Bedford detailed the disposition of the various hospitals. He admitted a shortage of ten field hospitals and said it was most difficult to meet requirements as operations extended. When the Army landed everything was practically upset. In Natal, whenever a unit arrived, it was sent where it was required with the result that the bearer companies and field hospitals got very much mixed. Colonel

Exham, the principal medical officer, said that the largest number of men in hospital at one time was 5000 and the maximum number of patients sent down to the base in one fortnight was 2000. Bloemfontein never suffered from lack of medical officers or equipment. In one month the hospitals dealt with 13,000 sick, a number which would tax the resources of London. At Hex River the Commission unexpectedly met an ambulance train on the way from the front and paid it a surprise visit of inspection. Several patients were questioned and all said they were satisfied with their treatment.

Mr. Treves thus describes his first experience of the battlefield: "I do not know that I ever wish to see a battlefield again; the horrors of it cannot be exaggerated. People have expressed a hope of seeing the fun! Well, I found it very sorry humor indeed. The heat was very intense and poor "Tommy" came back to the camp almost unrecognizable by reason of blood, and dazed and speechless from thirst. Everybody longed for the night." Describing the hospital arrangements, he says: "We had no camp to go to, so the nurses slept on the boards of a looted store and I slept in a cart. Better nurses and more devoted women I never met; they gave poor "Tommy" all they had—their water-bottles, their handkerchiefs, and even their mattresses to lie on. Their very presence amongst the dead and dying was something, and they thought of means of relief that would not have occurred to us men."

A short time ago I sent an account of a case in which a bee-sting proved fatal to a young lady. Another case has just occurred in which the patient was a child ten months old. It was stung while lying in its cradle and death supervened in a few hours. At the necropsy it was found that the child had been stung over a vein on the face which gave rise to cerebral thrombosis.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

ASTHMA AND THE FRONTAL SINUS—APHASIA AND HEMIPLEGIA—PATENT DUCTUS ARTERIOSUS—FILARIA SANGUINIS AND MOSQUITOES—TRAUMATIC RUPTURE OF THE HEART—RESIDUAL URINE AND THE PROSTATE—OCULAR PARALYSIS—INFLUENZA AND PARALYSIS—SYPHILIS AND LUPUS—MYXEDEMA IN THE MALE.

L. Turner, at the Edinburgh Medico-Chirurgical Society on July 4, 1900, exhibited a man afflicted with asthma and chronic suppuration of the left frontal sinus and left maxillary antrum. The antrum was first opened, evacuated and drained. Later the frontal sinus was trephined, curetted and drained. Trickling of pus into the nose thereupon ceased and the asthma improved greatly.

W. Russell exhibited (1) the brain and heart from an aphasic and hemiplegic of long standing. Sunstroke had occurred twelve years previously. In the left hemisphere were many large cysts, fluid contents, due to embolism of one of the middle meningeal branches. The heart showed old vegetative endocarditis, especially mitral in side. An old aneurism of the aorta also was present. (2) The brain of a recent case of aphasia and hemiplegia. The lesions almost duplicated the above, but were due to thrombosis following extensive middle meningeal atheroma. The thrombosis and embolism had produced the same effects, namely, brain-tissue softening and cyst formation.

Dr. Pearson for G. A. Gibson showed (1) a patent ductus arteriosus, diagnosticated during life and proved by autopsy, due to right lobar pneumonia. (2) Specimens of filaria sanguinis lodged in the proboscis and muscle of a mosquito.

H. Littlejohn displayed (1) the heart of a youth caught between the buffers of two railway carriages. Although there was no external traumatism and no fractured rib, the right auricle was ruptured for nearly two and a half inches. (2) The stomach from two carbolic acid suicides; the first, ten ounces of the acid having been taken, presented the typical contracted, leathery appearance, with thick white putty-like material over the mucosa; the second took ordinary disinfecting carbolic solution out of a beer-bottle and died in fifteen to twenty minutes, although the solution was weak. The point learned from these specimens is that the stomach-tube should always be used although the poison may have been corrosive. The danger of puncture by the tube is much less than of absorption of the drug left in the organ. (3) The liver and other organs from a case of acute yellow atrophy of the liver or of phosphorus poisoning. The patient was illegitimately pregnant and marriage had been refused by her lover. Abortion followed ingestion of the poison and death in thirty-six hours. The uterus was normal and precluded the possibility of septicemia. The liver was atrophied. The tests for phosphorus had been negative but that did not preclude the likelihood of this drug having been used. The stomach was also shown to illustrate post-mortem digestion.

A. Bruce showed the brain of a long-standing aphasic and right hemiplegic. His symptoms had been good comprehension of spoken language, faulty comprehension of written language; unintelligible voluble utterance; good memory and utterance of music, in songs the words were lost, but the rhymes preserved; extraordinary power of mimicry. A zone of softening extending along almost the whole fissure of Sylvius, the superficial portions of the temporal lobe escaped, and the angular and marginal gyri were almost entirely free from softening.

A. G. Miller read a clinical note on residual urine and enlargement of the prostate. Catheterism early established appears to be the ordinary way of dealing with the enlarged prostate and residual urine. The condition of the gland in itself need not be especially disastrous,

but when the residual urine appears at all in large quantity the real trouble begins. In the normal individual the bladder distention reaches a certain point, causes discomfort and leads to emptying. This function is usually accomplished by voluntary relaxation, involuntary expression and atmospheric pressure. Thus, by habit when the prostate hypertrophies and offers a mechanical bar, really no voluntary expulsion is performed. He quoted a case in which under instructions the patient, instead of at once taking to catheter-life, first voided his urine, then after a few moments made a direct voluntary effort to really empty the bladder. The result had been less getting up at night, amelioration of all the symptoms, and reduction of the residual urine to a half-ounce. In his opinion this was very well worth trying on all cases before adopting catheter life. In locomotor ataxia in which early symptoms of bladder difficulty manifest themselves, the intelligent carrying out of the principles of using the voluntary muscles for expulsion of the contents of the bladder will often delay the commencement of the use of the catheter for many years. It called for intelligent, faithful regular effort, instead of laziness, indifference and ignorance on the part of the patient, and if begun before profound bladder changes have ensued, much good can commonly be expected.

A. Bruce read the autopsy report of a case of complete paralysis of the upward and partial paralysis of the downward movements with conservation of the lateral conjugate deviation functions of the eye. This is a very rare affection, while its converse is common, namely, loss of the conjugate deviation while the upward and downward motions persist. The sixth nucleus innervates directly the external rectus of its own side and indirectly the internal rectus of the opposite ball and is so isolated from the third and fourth nuclei as to render focal lesion of it possible and common. But to have it escape while the other two are destroyed is very rare and pathologically curious. This patient was a hard-working woman, who was overtaken with absolute inability to turn the eyes up, very slight power to look down, while sidewise coordinated function was perfect and convergence, at first perfect, also gradually failed; remarkable unsteadiness in gait and inability to stand erect or sit up in bed without support were present. Ferrier stimulated the anterior part of the middle cerebellar lobe and obtained backward movement of the head and upward turn of the eyes, irritation of the posterior part caused the eyes to be depressed and the head carried forward; still farther back appeared to be centers for the conjugate deviation of the eyes. The post-mortem showed a glioma arising in the grey matter, growing backward along the aqueduct of Sylvius, upward into the third ventricle, sparing the sixth center and accommodation, situate in the midline, projecting into the back part of the third ventricle and not arising from the optic tract.

A. James said that when influenza attacks the nervous system almost any effects may be expected. In his ward three cases of profound influenza poisoning had showed a rapidly ascending paralysis (Landry's type). The following is the history of a clear case: Female; twenty-three years old; attacked by influenza seven months and again two weeks before admission during the activity of the disease; pains in the head and back; delirium; insomnia; periods of rational consciousness; globus hystericus. Physical examination on January 31, 1900, showed temperature 103° F., pulse 130, respiration 22; inability to answer questions; persistent outcry of pain; paralysis of arms and legs, not of diaphragm (as far as could be ascertained); normal sensorium; absence of superficial and deep reflexes; marked impairment of deglutition; Cheyne-Stokes respiration when awake, normal when asleep; slight paresis of upper lip later; complained of pain behind the sternum. Death ensued in the midst of an attack of wild delirium and clonic spasm of the head. In short, the course was one of a rapidly ascending and finally of a fatal bulbar paralysis.

Fleming read the following autopsy notes of the above case: Viscera normal except incipient broncho-pneumonia at the base of the left lung, cloudy swelling of the liver and kidneys, hemorrhage into the spleen. The cerebrospinal system showed firm posterior adhesions of the dura mater; normal pia and arachnoid; general congestion and edema of the grey cerebral matter; no degenerations in the cord-columns; disappointing almost negative lesions in the cord-cells; swelling of medulla-cells and the cells of the anterior cornua; eccentric nuclei and considerable chromatolysis in these same cells; marked atrophy and deep staining of the lumbar and cervical anterior horn-cells with microscopic red blood-cell diapedesis about them, like minute hemorrhages.

N. Walker brought before the society two late syphilides which were instructive from the standpoint of diagnosis. In the first case the decision lay between late syphilis, lupus erythematosus and lupus vulgaris. These points made the diagnosis clear although the site was over the nose, a small punched-out ulcer, rapid development within six months, history of secondaries and results of treatment. The other patient was a nine-year-old child with large nummular masses over the left half of the body and thigh; when these came away large punched-out syphilitic ulcers remained. The treatment was only the tying-on of a large bib to maintain mercury in apposition with the skin.

W. Russell presented a male, fifty-eight years old, victim of myxedema, a disease more rare among men than among women. Complete baldness established through three years; incipient alopecia of the whiskers and beard; mental lethargy; slow speech; malar flush and swollen eyelids were all present.

SOCIETY PROCEEDINGS.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Thirteenth Annual Meeting, Held at Louisville, Ky., September 18, 19 and 20, 1900.

First Day—September 18th.

The Association met at the Galt House under the presidency of Dr. Rufus B. Hall of Cincinnati, Ohio.

Dr. Lewis S. McMurtry of Louisville welcomed the Association on behalf of the local medical profession. The address of welcome was responded to by President Hall.

Bilateral Inguinal Celiotomy.—Dr. A. Goldspohn of Chicago considered the erroneous objections to bilateral inguinal celiotomy and shortening of the round ligaments via the dilated internal inguinal rings, and its superior ultimate results in simple and complicated aseptic retroversions of the uterus. For a description of the technic of his operation, the writer referred to his previous articles on this subject. He laid stress upon cutting only through the skin and fat and making the required opening through the aponeurosis, the canal and the internal ring bluntly. The ring is very readily dilated sufficiently to admit one or, if needed, two fingers, and to admit of drawing out the tube and ovary for the exercise of the highest degree of delicate and exact conservative surgery upon them without doing violence to their supports. The wound is closed in four layers *à la* Bassini. In the second layer the round ligament becomes placed as in a sandwich between the posterior surface of Poupart's ligament and a good bundle of elastic muscle at each stitch which makes hernia impossible, and saves the ligament from strangulation while it holds firmly enough against Poupart's ligament to secure a broad union. This hernia has not followed the writer's operation in fully 125 cases that he has examined or had reports from. As the internal inguinal ring is just in front of the normal lateral location of the ovary and ampulla of the tube, these organs and the posterior surfaces of the uterus can be reached by one finger in a one-inch opening here as well as by two fingers in a two-inch opening in the linea alba midway between the symphysis and the umbilicus, and for the necessary access to the pelvic wall to shorten the proper suspensory ligament of the ovary and tube, this small opening serves well; while a large median ventral incision and much traumatism of viscera by that route would be needed, and by the vagina it cannot be done at all.

round ligaments are always present if the uterus is. In fully 190 cases, including 75 simple Alexanders, he has found both ligaments in each case after his pupilage on about one dozen dead women. But in four patients he traced one from within the pelvis outward. He has never had a death from the operation. But one case died from a serious renal complication that was not previously discovered, owing to an exchange of samples of urine by a nurse. Thorough shortening of the round ligaments via their natural channels and anchoring forward (not laterally) is the only operation that has been proven, or is likely to be proven, to stand what the writer demands as the normal standard for all operations of this kind, and has called it the "double test of pregnancy," *i. e.*, that they do not embarrass gestation and complicate labor, which is the single test, but also do not permit a recurrence of retroversion of the uterus after one or more subsequent labors. The difficulties in diagnosis as to presence of pus are no more than proficient gynecologists will meet successfully, and doubtful cases can be cleared up by ten to fourteen days in bed with temperature douches and extensive fomentations. The scars being in the groins, and covered mostly by hair, are not seen like regular laparotomy scars. In the discussion, Dr. Charles G. Cumston of Boston said that from his experience in operating both by the abdomen and vagina, as well as from a pathological standpoint, it has always seemed to him that serious lesions of the adnexa, such as the essayist had treated through a bilateral inguinal incision, are usually out of reach, and that these lesions can be dealt with more easily and satisfactorily through a median, a posterior, or anterior vaginal incision. Simple, uncomplicated cases of retroversion are rare. The Alexander operation in the so-called simple cases of retroversion can be greatly improved by an additional operation through the posterior cul-de-sac. Dr. J. Henry Carstens of Detroit, Mich., rarely sees cases of plain, uncomplicated, non-adherent retroverted uteri that require the Alexander operation. The complicated cases of retroversion require some other operative procedure. Dr. W. E. B. Davis of Birmingham, Ala., referred to the indications for performing the Alexander operation, and called attention to the class of cases in which it should be performed. Dr. Frederic Coggshall of Boston has performed over a hundred Alexander operations in combination with some other operative procedure. In simple, uncomplicated cases of retroversion of the uterus the organ can be easily replaced. Dr. Rufus B. Hall of Cincinnati thinks that the old operation of anterior fixation or ventrosuspension of the uterus is not as popular as it was a few years since. Soon it will only be done in rare instances. He believes, however, that a modified operation, such as that advocated by the essayist, is based on rational surgical principles, and thinks that the author is working in the right direction.

Round Ligament Ventrosuspension of the Uterus.—Dr. D. Tod Gilliam of Columbus, Ohio, said that various devices have been resorted to for restoring and holding in place the retrodis-

placed uterus. All of these have been faulty and many absolutely prejudicial. The need of the hour is an operation that will utilize the natural supports of the uterus, that will insure a fair amount of mobility, that will adapt itself to the various functions of the uterus—pregnancy and parturition, and that will be lasting in its results and withal easy of execution. Profiting by the work of Ferguson along this same line, he has devised an operation which he thinks fulfils all these indications, and, as he believes, solves the problem most satisfactorily. The steps of the operation are as follows: (1) A median abdominal section, three or four inches in length, is made at the usual site between the umbilicus and pubis. (2) The adhesions are broken up and the fundus brought forward, after which the patient is placed in the Trendelenburg position. (3) Seize the round ligament on one side and bring it to the opening. This may be done either by the fingers or by the aid of forceps. (4) Carry a thread under the ligament at a distance of about one and a half inches from the uterus. The free ends of the thread are brought out of the abdomen and secured by clamp forceps. (5) The other round ligament is secured in the same way. (6) Expose the rectus muscle near the lower end of the incision by retracting its sheath and by rolling it out of its sheath on the tips of two fingers applied to the peritoneal surface under it. (7) Select a point one inch external to the margin of the incision and something over an inch above the pubis through which the perforating forceps specially devised for this purpose are thrust into the peritoneal cavity. The two fingers already in the cavity guard the instrument in its passage and place the thread which surrounds the ligament within its jaws. (8) The perforating forceps are now withdrawn, after removing the clamp forceps from the thread, and both thread and ligament are brought up through the perforated wound in the abdomen. (9) While the ligament is held taut, fasten it into the wound by a to-and-fro catgut suture passed deeply through the ligament and including the tissues on either side. (10) Treat the opposite side in the same manner and close the median abdominal incision. Rigid observance of all the rules of aseptic surgery is essential to prevent suppuration, and only a small loop of the ligament should be drawn up through the wound.

Composite Teratoma of the Ovary.—Dr. W. E. B. Davis of Birmingham, Ala., presented a specimen, saying he was in doubt as to the nature of the tumor which he presented, notwithstanding the fact that the above diagnosis was made by pathologists of high standing. Mrs. N., aged thirty-four years, married, was referred to him by Dr. E. G. Givhan of Montevallo May 3d. Mother of three children; had always menstruated regularly. Patient noticed a growth in the abdomen two years ago. She had menstruated in January before the growth was noticed and then missed her periods until March, at which time she menstruated or bled very freely for two weeks. She then missed periods until the following October, with no untoward symptoms except an attack of colic in August. The movements were noticed before August. After October she menstruated regularly until the following January, missed her periods then until October 24, 1899, when a child was born. She has not menstruated since. After the birth of the child at term, the tumor developed quite rapidly and on May 7, 1900, she was operated upon. Patient was discharged as cured June 9th. The tumor was quite large and had a pedicle nearly two inches in breadth and quite thick which was attached to the uterus. The fetus was so large and so well formed that the essayist was of the opinion that there had been an ectopic gestation, with rupture of the gestation sac and the expulsion of its contents into the cavity of a preexisting ovarian cystoma. From the history of the case the diagnosis had been made of an old ectopic pregnancy. He is still inclined to that opinion. Examination reveals a large, rounded, ovoid mass about the size of an adult head, covered by a moderately thin fibrous capsule. The capsule is continuous on one side with the tumor mass. The weight of the whole tumor is 2850 grams. Within the capsule are observed numerous sacs of variable size, which are rounded in contour and filled with a semi-fluid, gelatino-albuminoid tissue. Lying in one side of the tumor is part of a fetus. There are numerous bones of a fetus lying in the capsule. The upper part of the fetus is embedded in the solid portion of the tumor. This portion of the fetus is so intimately combined with the tumor that no sharp line of demarkation can be determined, one tissue gradually passing over into the other. There are numerous nodular and teat-like elevations, in some places covered by smooth skin (?), in others by skin(?) provided with fine, brownish, silky hair. Incision of these frequently reveals a whitish, cheesy substance resembling sebaceous secretion. The soft parts of the fetus are macerated and quite soft. The bones, such as the vertebræ, ribs, tibiæ, and metatarsal, are exposed in many places. There are two well-developed scapulæ (right and left), and to the left is attached some slight semblance of an extremity. Lying in a mass of muscular tissue to the left of the vertebral column is a long piece of bone resembling somewhat a humerus. Attached to the lower end and left side of the vertebral column by means of a flattened piece of bone is an almost perfect lower extremity. The femur is entirely covered by muscle, but the tibia is exposed at its lower end. Some of the phalanges are missing, but the foot is fairly well formed. Careful dissection of the upper part of the fetus fails to reveal any cranial bones attached to the vertebral column. There are two pieces of jaw-bone (inferior maxillæ) lying in the mass of tissue at this

place. They are well shaped, and a dissection of the right one shows rudimentary tooth sacs and a piece of nerve. The laminæ of the vertebræ have not united, so that the spinal canal is not complete and the spinal cord is seen lying in this position, with nerves arising regularly from each side. The bones lying free within the capsule are two parietal, an occipital, two pieces of frontal, abnormally united, several well-formed ribs, and five or six long bones of extremities. Parts of the lungs, liver, stomach, and about sixty centimeters of intestine are preserved.

Microscopic Examination.—Microscopic examination of sections of tissue selected from all portions of the tumor shows a very complex histological structure. Some portions of the tissue are composed of simple, fully-developed adipose tissue, enclosing occasional bands of unstriped muscular tissue, the whole surrounded by fully-developed and practically perfect skin. The skin contains sebaceous and sweat-glands in considerable quantities, and hair-follicles, with hairs in position. The sebaceous glands are larger than those found in normal skin. Other portions show true myxomatous tissue, still others cartilage, and the early stages of osseous development. Sections from the walls of cysts show the inner surface of them to be lined by almost true skin; the epithelial layers lie internally, lining the cyst, the papillary portion lying externally. Sebaceous and sweat-glands occur in these sections and frequently they may be seen opening into the cysts. Other cysts are lined by a simple layer of low cubical epithelium, either in uniform arrangement or thrown into folds or villi, similar to the formations found in uncomplicated cystic papillomatous adenoma of the ovary. The lining of other cysts is made up in some parts of flat or squamous epithelium, in other parts by columnar or cubical epithelium, of the glandular type, and frequently one kind of epithelium passes over into the other. Anatomical diagnosis: Composite teratome, combined with cystic adenoma of ovary.

Chronic Cystitis in the Female.—Dr. Charles Greene Cumston of Boston drew the following conclusions: (1) Sublimate instillations will often produce a very great improvement in the distressing symptoms met with in both tuberculous and non-tuberculous cystitis. In some cases a complete cure may be had. (2) When the instillations fail to produce the desired effect, curettement of the bladder is indicated in both tuberculous and non-tuberculous cystitis. (3) In gonorrheal cystitis instillations of sublimate are very efficacious. (4) Under favorable circumstances a radical cure of primary tuberculous cystitis may be obtained by curettement when the vesical lesions are localized and the kidneys free from the disease. Curettement per urethram will not allow the surgeon to reach the entire surface of the bladder, so that when the lesions are extensive they should be directly treated by suprapubic cystotomy. (5) Much relief may be afforded to a large number of patients suffering from tuberculosis of the bladder, but who on account of the advanced stage of generalized infection are in no condition to undergo a more radical operation. (6) When cystitis is due to a prolapsus of the genital organs, and when hysteropexy, combined with anterior and posterior colporrhaphy, does not relieve the bladder symptoms, curettement of the bladder, followed by sublimate instillations, is the proper treatment.

Dr. A. Goldspohn does not believe that infiltrations, etc., of the bladder can be recognized by the curette at an early stage of the disease process. With this instrument the operator cannot detect beginning ulcerations or papillomatous growths in this organ. The bladder being a membranous organ, curettement of it is entirely different from that of the uterus, in that the operator does not receive the tactile information or intelligence from this instrument in the bladder that he obtains from it in curetting the uterus. Scraping the bladder, therefore, is done largely at random, without any touch sensation to govern the operator as to how little or how much surface he shall curette. Under such circumstances it is not rational to assume that the mucous lining of the bladder will be evenly and uniformly curetted. Uneven surfaces or small areas would be left untouched. In the treatment of infectious cystitis, not tuberculous, he has obtained good results from a solution of one-half to one per cent. of oil of cloves in water. Dr. J. Henry Carstens agrees with the last speaker that there are certain points in the bladder in the class of cases under consideration that cannot be reached by the curette. He has had cases of tuberculous, gonorrheal and septic infections of the bladder which have yielded to the judicious application of permanganate of potash. Dr. James T. Jelks concurred in the statement of Dr. Carstens that permanganate of potash is an invaluable remedy for infective disease of the bladder, particularly of the gonorrheal variety. A solution of 1-6000 is strong enough to begin with, the strength being increased in accordance with the indications of the particular case. Dr. T. J. Crofford of Memphis has performed curettage of the bladder several times. If the inflammatory process is confined to the neck or thereabouts, there is very little difficulty attending the curettement of that area of surface. No inflammatory zones would be left to cause further trouble. Dr. Cumston in closing referred to the pathology of bladder lesions and said they were almost always situated in the trigonum, consequently this is the portion of the viscus which the operator should strive to reach. If the whole bladder surface is involved, suprapubic cystotomy is the operation of choice, and curettement in such a case would do very little, if any, good. He uses the cystoscope in the treatment of this class of cases.

Perforated Gastric Ulcer with Remarks.—Dr. Henry Howitt of Guelph, Ontario, read this paper. The first two cases occurred years ago before the operative procedures were commonly known and had the usual termination, one dying within twenty-four hours from the commencement of the illness without having had a single symptom indicating the existence of the trouble. The other two reported by him are of recent date and the patients were saved by timely operations. In one the operation was devoid of any serious difficulty, but in the other the abdomen contained gas and a large amount of pus, the colon was enormously distended, requiring to be opened, and collapsed before the stomach could be reached. There existed also the remains of a ruptured abscess cavity below the transverse portion of larger bowel, the walls of which were formed by it together with the coils of small intestine and omentum. This had its origin probably in a slight leakage which occurred days before the final rupture. The orifice of the ulcer was of sufficient caliber to admit his little finger, and was situated in front close to the pyloric valve. The surrounding parts were so thickened, dense and nodular as to exactly resemble carcinoma of the pylorus and adjacent part of the stomach. A section nearly two inches in length had to be removed before the ulcer could be closed. The intestines were previously eviscerated to permit of the room necessary to reach the part and to expose the pools of pus in the pelvic flanks and other places difficult to reach. The upper portion of the jejunum was anastomosed by means of a Murphy button to the anterior wall of the stomach. After the anastomosis was completed, the arm of intestine above was stitched to the wall of the stomach an inch or more to the right and a little above the line of the button. This procedure in his opinion overcomes the acute angle and its ill-effects. Drainage-tubes were inserted through perforations made in flanks well to the back and in the lower abdomen close to the pelvis, to the outer side of the right rectus muscle. The sutures were all removed except two in the middle of the wound opposite the umbilicus on the seventh day. Three hours later the patient had a sneezing fit, and the wound tore open from the upper angle to the umbilicus, exposing the situation of anastomosis, and coils of bowel protruded. It was restitched an hour later without anesthesia, and no ill-effects followed. The patient made an uneventful recovery, and is now for the first time in eighteen years free from gastric distress.

Dr. W. E. B. Davis has never operated for ulceration of the stomach, attended by perforation. He had encountered two cases which he should have operated upon had the symptoms been sufficiently marked to warrant operative procedure, but they were not, and he did not feel therefore emboldened to undertake it.

Dr. Edwin Ricketts narrated the case of a woman, forty-eight years of age, who had had a gastric ulcer for three years. Under rectal alimentation she gained sixty pounds in flesh. Subsequently she committed some indiscretion in diet, was again taken sick, and consulted another physician, who made a diagnosis of cancer of the pylorus. She went from bad to worse, and finally died. Post-mortem examination revealed a perforating gastric ulcer the size of a lead pencil, situated on the anterior surface near the pylorus. Dr. A. Vander Veer of Albany spoke of two cases of gastric ulcer which ultimately resulted in carcinoma of the pyloric end of the stomach. From the number of cases in which he has done gastrointestinal anastomosis, he is satisfied that he has had to deal with the cicatrices resulting from gastric ulcers in many instances.

Surgery of the Gall-Bladder.—Dr. A. Vander Veer of Albany said that no great reliance is now placed upon jaundice as a positive symptom. Four interesting and instructive cases are reported and the following conclusions drawn: (1) An early diagnosis is important. (2) In suppuration of the bladder with adhesions, a most thorough examination should be made from within by digital exploration and use of the probe for any possible deep-seated calculi. (3) In prolonged operations upon the common duct or hepatic ducts, where adhesions are present and it is difficult to close the incision after removal of the calculus, drainage through the peritoneal pouch by means of the lumbar stab is advisable. (4) When the patient is suffering seriously from cholemia, with marked ecchymotic spots over the body, intense itching, the blood examined, and found in a septic condition, an operation is not to be encouraged. (5) General practitioners as well as the surgeon should place more earnestly before the patient and friends the dangers of repeated attacks of gall-stone irritation resulting in cancer of the ducts, stomach or liver.

[To be continued.]

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held May 3, 1900.

The First Vice-President, William H. Katzenbach, M.D., in the Chair.

Hyperchlorhydria.—Dr. Max Einhorn said that some fifteen or twenty years ago it was held that disturbances of the stomach were generally supposed to be conditions in which the secretions were deficient. When dyspepsia was present hydrochloric acid was always given to supplement the secretions. Later investigations and study of the gastric secretions in normal and diseased states showed that the secretion of hydrochloric acid might be above normal in pathological conditions. This was thought to be exceptional, but statistics have shown that the percentage of the cases of increased secretion is

not small. It was found that conditions existed in which secretion continued even when there should be none at all, that is in an empty stomach. The speaker said that he did not wish to take up the whole subject of hypersecretion, however, but merely that of hyperacidity.

Proportion of Cases of Hyperchlorhydria.—Dr. Einhorn has tried to learn the proportion of cases of hyperchlorhydria to general digestive ailments. In two years' experience he finds that half his patients show a greater degree of acidity than normal. Moreover, the proportions are not alike in every city. In the smaller cities and towns the cases of hyperchlorhydria become less and less in number. In the country they are almost unknown. It is characteristically the disease found among the so-called better classes, the business man, the man of many cares, the intellectual man, women who are active socially and intellectually. This explains to a certain extent the discrepancies between the large cities and the smaller places in the statistics of this disease.

Characteristic Symptoms of Hyperchlorhydria.—The hyperchlorhydria may be recognized not only by an examination of the gastric contents, but by clinical symptoms and the general appearance. The patients are usually well nourished, plump, and appear in good condition. Only exceptionally a run-down case presents itself. They suffer from pain an hour or two after eating, the immediate effect of the taking of food being a feeling of relief. Sometimes this feeling of distress and pain occurs only after certain meals. For instance, the patient may be well after breakfast and luncheon but suffer after dinner—the heaviest meal of the day. A number of cases find that they are relieved after belching up gas. Others have a dulness over the pit of the stomach and occasionally suffer from water-brash. Another and smaller group complains of regurgitation. Some have a burning sensation along the esophagus, but nothing comes up. There are again rarer cases in which there is no pain, but in which there is complaint of dizziness one to two hours after meals, or of a feeling of fright at that time. That this dizziness and fright are due to hyperchlorhydria is proved by the fact that they disappear with treatment for that condition. Sometimes hyperchlorhydria may be mistaken for genuine angina pectoris, the symptoms are so much alike, there being dizziness, fright, a little difficulty in breathing and pain in the precardia. Sometimes there are no stomach symptoms, but severe headaches an hour or two after meals. These, too, disappear with treatment for hyperchlorhydria. In 90 per cent. of the cases where the symptoms indicated are present hyperchlorhydria may be assumed. In rare cases achylia gastrica, where there is no juice at all, may present the symptoms of hyperchlorhydria.

Anomalous Symptoms.—The appetite is usually good and the food is taken with relish. A small fraction has a hungry feeling an hour or two after eating and at other unnatural times. The thirst, however, is not increased. The bowels are nearly always irregular. Some suffer from obstinate constipation, which increasing doses of cathartics do not allay, though this constipation disappears with treatment for hyperchlorhydria. A smaller proportion, perhaps 5 per cent., suffer from diarrhea. There are cases, however, in which a positive diagnosis can only be made by an examination of the contents of the stomach.

Hyperchlorhydria Without Symptoms.—Hyperchlorhydria may exist without giving rise to symptoms. Dr. Einhorn has had patients in whom the symptoms ceased entirely, yet an examination of the stomach-contents later showed the hyperacidity to be just as great as ever. In such cases, outside of care of the diet, there should be no treatment. Sometimes hyperchlorhydria seems to be an anomalous condition of the stomach normal to a particular individual.

Causes of Hyperchlorhydria.—It has been thought that hyperchlorhydria is due to some anatomical lesion, but as the disease does not have a fatal termination there could be no autopsies and there was much speculation with regard to its morbid anatomy. Hansemann had a patient suffering from hyperchlorhydria who died suddenly of pneumonia. The stomach was found to be normal. The mucous membrane was examined microscopically, but no lesions were found. Dr. Einhorn personally has examined small pieces of the mucous membrane of living patients, and has found strongly hypertrophied glands, but every organ that is overworked hypertrophies, and this condition of the mucous membrane must be looked upon as a secondary, not a primary condition. Dr. Einhorn thinks hyperchlorhydria a functional disease, the disturbance in the secretions being due to nervous derangement, as is shown by its prevalence among the classes subject to nervous worry and strain and excitement. Besides the nervous influences, to a slighter degree tobacco or alcohol or both may contribute to the disease.

Hyperchlorhydria and Ulcer of the Stomach.—Hyperchlorhydria exists in ulcer of the stomach. It is a matter of controversy whether the mucous membrane in case of ulcer is more vulnerable and excited, or whether the ulcer is the cause of the hyperchlorhydria. Dr. Einhorn does not think that the ulcer is the cause, as he has found ulcer of the stomach in which there was subacidity or no acidity at all. It may be said to be true, however, that where there is chronic hyperchlorhydria ulcers develop more easily.

Differential Diagnosis.—In the diagnosis of hyperchlorhydria it is sometimes difficult to distinguish between hyperchlorhydria alone and the disease in connection with other pathological conditions. There may be an ulcer or gall-stones may be present and the symptoms be similar to mere hyperchlorhydria. If there is vomiting of blood, pain occurs immediately after taking food and the area of pain is circumscribed: it is probable that there is an ulcer in addition to the hy-

perchlorhydria which an examination of the contents of the stomach will show. The evidence of the presence of an ulcer may be found in the resistance of the conditions to treatment for simple hyperchlorhydria. In a case of hyperchlorhydria which does not yield after three or four months of treatment the conclusion that there is an ulcer is perfectly reasonable. Hyperchlorhydria also frequently exists in connection with gall-stones. In the attacks due to gall-stones the pain comes on very suddenly and is extremely severe. They are not dependent on meals. These symptoms make the differentiation of gall-stones from ulcer easy as a rule. Certain cases will however present serious difficulties.

Treatment.—Dr. Einhorn finds it very satisfactory as a rule to treat hyperchlorhydria. It is a condition which yields with gratifying readiness to rational therapy. Diet is of course the most important consideration. There was a time when physicians prescribed meats, little fat, no carbohydrates, no starchy foods, the reason being that starchy foods irritated the stomach and were not digested in the presence of an excess of acid. This exclusive meat diet is being abandoned, however. Starchy foods have an important part in the sustenance of the body and, moreover, their effect in the stomach is not so serious as was thought, for their digestion depends very largely upon the intestinal juices. Partly for this latter reason just the reverse of the exclusive meat diet has also been held to be the right thing. Because meat increases the gastric secretions it has been excluded entirely by some in the treatment of hyperchlorhydria and starchy foods only have been given with a little milk. Dr. Einhorn finds a medium course between these extremes the most satisfactory. It is not safe to deprive people of so important a group of foods as the starches in a treatment which must be kept up for months, sometimes for years. Dr. Einhorn tries to limit the indulgence in the foods that seem most irrational and prove to be irritating, but does not entirely exclude anything except acids. He permits the patient to have meats, preferably the tender kinds and those not too highly seasoned, milk, bread, butter, and sugar. Of the starchy foods he particularly restricts potatoes. The acids can safely be eliminated as they supply no element of nourishment. He directs the patients to eat smaller meals and to eat oftener. In this way the energy of the stomach is saved. The food relieves the symptoms for a time, because the albumin in it takes up the acids and so checks the effect of the hyperacidity on the mucous membrane. He insists that the patient eat bread and butter, or a bowl of milk and bread, between each meal, and if the hour for retiring is late a bowl of milk and bread before going to bed, in order to avoid waking up hungry and uncomfortable during the night. He objects to any food that is highly seasoned. Recent experiments have shown that sugar has a tendency to diminish acidity and sugar may therefore be taken with safety. The fats, cream and butter are especially beneficial in reducing acidity.

Medicinal Treatment.—The alkalies should be given at the time when the acidity is highest, about two hours after meals. Bicarbonate of soda, given in doses of one-half to one teaspoonful, gives good results. For the constipation, rhubarb and soda, or rhubarb and magnesia may be given; if there is diarrhea instead of constipation the soda only should be given. The bromides are useful along with the alkalies where there is a nervous and excited condition. Dr. Einhorn does not approve of belladonna or atropine. The disease requires remedies which can be given with safety for long periods of time. The washing out of the stomach is not essential. He prefers to spray the stomach with nitrate of silver, as in this way a smaller amount of the drug can be used and it is not necessary to get it out again, as is the case when the stomach is washed. He finds the use of the electric current beneficial. The faradic as well as the galvanic current should be used.

REVIEWS.

Transactions of the New York State Medical Association. For the Year 1899. Volume XVI. Published by the Association.

This volume of Transactions contains several series of articles that it is well worth practitioners' while to know where they may be obtained for reference. There is a discussion on expert evidence containing articles by such well-known legal authorities as Justice Bartlett of the Supreme Court, ex-Judge Joseph Daly of New York, Charlton T. Lewis, Esq., William A. Purrington, Esq., and Theron A. Wales, Esq.

The feature of the volume, however, is the discussion on typhoid fever, which occupies nearly 150 pages. The various phases of the subject are presented by such distinguished specialists as Dr. William Osler of Baltimore, Dr. W. H. Thomson of New York, Dr. Reginald Fitz of Boston, Dr. A. A. Smith, Dr. Abraham Jacobi, Dr. E. G. Janeway, Dr. Herman M. Biggs and Dr. William H. Park of New York. The surgical aspects of the disease are presented by Dr. W. W. Keen of Philadelphia. On the whole, it may be said of this volume that it is one of the best representatives of thoroughly scientific work issued by any of the State Medical Associations in the country.

Report of the Mortality Records of the Mutual Life Insurance Company of New York for Fifty-six Years (1843 to 1898). By Elias J. Marsh, M.D., and Granville M. White, M.D., Medical Directors. New York: The Mutual Life Insurance Co., 1900.

This report will be read with interest by those who have to do with life-insurance examinations

as well as by those who are concerned for anthropological reasons with the percentages of deaths at different ages. In the first table presented it is seen that under forty-five years of age, the greatest incidence of mortality is from tuberculous disease, there being 3307 deaths from consumption out of a total of 13,623; between the ages of forty-five and sixty apoplexy and arterial diseases lead in the causes, with digestive diseases next and consumption and heart disease important factors; above sixty years of age the cardiac diseases and arterial disturbances overbalance the other causes of death, as one would expect. Bright's disease, according to this table, kills about an equal number of persons in the periods between forty-five and sixty and above sixty years of age. The acute infectious diseases are prominent factors of death below forty-five and appear to be equally virulent above sixty, while between these years their mortality is not so high.

Eighty-one deaths are reported as due to abortion and puerperal diseases, although the tables do not state the actual cause of death, whether sepsis, convulsions or other puerperal complications. The majority of these deaths occurred within the first year in which the policy was issued and for this reason the company does not solicit for insurance pregnant or newly-married women.

There are thirty-five tables presented in which the mortality is shown in different States and countries, in different diseases at different ages, age percentages, disease percentages, etc. The work is monumental and is carried out along the lines of the Bertillon system. It is interesting as a study and useful as a reference work.

Atlas and Epitome of Special Pathologic Histology. By Docent Dr. Hermann Dürck, Assistant in the Pathologic Institute, Prosector to the Municipal Hospital in Munich. Authorized Translation by Ludwig Hektoen, M.D., Professor of Pathology in Rush Medical College. Volume I. Circulatory Organs, Respiratory Organs, Gastro-intestinal Tract. With 62 colored plates and 158 pages of text. Philadelphia, W. B. Saunders, 1900.

After a brief review of the normal histology of an organ, the author compares the pathological condition of this with that of other organs or of the whole body, and then cites the etiology of the individual cell-changes, and describes the microscopical appearances of the various cut sections. These latter are illustrated as ordinary stained microscopical sections, two or more appearing on each colored plate. Their distinctness of delineation and accuracy of coloring is a credit to the publishers. This volume includes the heart, pericardium, vessels, lymphatic glands, spleen, bone-marrow, nose, larynx, trachea, bronchi, lungs, pleura, thyroid, mouth, pharynx, esophagus, salivary glands, stomach, intestines and peritoneum.

Food for the Sick and How to Prepare It. By Edwin Charles French, M.D. John P. Morton and Company, Louisville, 1900.

This little volume is a very useful and practical collection of recipes that have been gathered from the head-nurses of hospitals all over the country. Some of them are said to be contributed by well-known physicians. None of the recipes are to be found in the ordinary cookbook and each recipe is said to have been thoroughly tried by a competent cook. The volume is calculated to be of the greatest assistance to those who have the care of convalescents. Its perusal cannot but prove suggestive to physicians as a guide to the directions they may give for the feeding of patients.

A Manual of Obstetrical Technique as Applied to Private Practice. With a Chapter on Abortion, Premature Labor, and Curettage. By Joseph Brown Cooke, M.D., late Attending Physician to St. Mary's Free Hospital for Children, Out-Door Department; late Attending Physician to the Northwestern Dispensary, Department of Diseases of Children, etc. Philadelphia and New York: J. B. Lippincott Company, 1900.

This little book is exactly what the title indicates it to be and what the author intended it should be—a manual describing in detail the technique of caring in private practice for a pregnant woman during the whole course of her pregnancy. The subject is considered solely from the standpoint of a physician treating a private case in her own home, and shows very clearly that such cases, with a little care and forethought, can be treated as well in private households as in a well-appointed lying-in hospital, no matter what emergency may arise. The key-note of the whole thing, of course, is to be thoroughly aseptic and to be ready for any emergency. How to be always aseptic and always ready the author tells in detail. He describes how the lying-in chamber should be prepared, and also the physician's outfit. This outfit consists of two distinct parts, the obstetrical box which is sent to the patient's house two or three weeks before labor is expected, and the obstetrical bag which the physician takes with him to the case. The details of every step in normal labor, and also in forceps delivery, version, craniectomy, perineorrhaphy, trachelorrhaphy, and symphysiotomy are described. Asepsis and antisepsis are vigorously insisted upon in every procedure.

The author makes numerous suggestions which many general practitioners might well adopt. To young practitioners just beginning, for whom the book is intended, it will prove of value, as every detail in the conduct of a case of pregnancy, from the initial visit and examination at the beginning of pregnancy to the delivery of the child and the convalescence of the mother, is carefully and minutely described.

The book is written clearly and concisely, and touches upon all those "little things" which go to make up the important whole, but which are not usually mentioned in text-books and which the young practitioner usually has to learn "by experience." The volume is illustrated by numerous excellent photographs of the different methods of examination and delivery of the pregnant woman.

Diseases of the Eye. By Edward Nettleship, F.R.C.S., Ophthalmic Surgeon to St. Thomas' Hospital, London; Surgeon to the Royal London (Moorfield's) Ophthalmic Hospital. Revised and Edited by Wm. Campbell Posey, A.B., M.D. Sixth American from the Sixth English Edition. Small 8vo., pp. 560. Lea Brothers & Co., Philadelphia and New York, 1900.

Nettleship's text-book has long been recognized as one of the best of the smaller text-books on the eye, and the present edition is considerably augmented and brought up to date, while the introduction of a number of special features considerably enhances the value of the work.

Normal Histology. By Edward K. Dunham, M.D., Professor of General Pathology, Bacteriology and Hygiene in the University and Bellevue Hospital Medical College. New Second Edition. Lea Brothers & Co., Philadelphia and New York, 1900.

Dr. Dunham's book on histology has heretofore contained pathological as well as normal histology. In issuing the second edition a change is made that presents the normal histology in a separate volume. The former edition of the book is so well known that the present volume needs no words of commendation. Dr. Dunham's style is eminently concise and clear. It is a distinct pleasure to read his lucid English. Text-books are often couched in a style so lacking in clearness and precision and in a phraseology so labored that the present work appears by contrast to have special merit. Medical writers generally are so little commendable for anything like grace of style that it is to be hoped that the rising generation of medical men influenced by text-books like this shall present what they have to say with less waste of words than has heretofore been the custom. Passages like the following commend themselves as models of terse descriptive writing: "The red corpuscles are soft elastic disks, with a concave impression in both surfaces. They are slightly colored by a solution of hemoglobin and are so abundant that their presence gives the blood an intense red color; but when viewed singly under the microscope each corpuscle has but a moderately pronounced reddish-yellow tinge. The hemoglobin solution is either intimately associated with the substance composing the body of the corpuscles, called the stroma, or it occupies the center of the corpuscle and is surrounded by a pellicle of stroma."

The illustrations in the book have the very praiseworthy quality that they all really illustrate. None of them are introduced merely for the purpose of increasing the number of illustrations in the book without adding any clearness to the text. Altogether there are 244 illustrations to 263 pages of text.

BOOKS RECEIVED.

Transactions of the Southern Surgical and Gynecological Association. Twelfth Session. Published by the Association.

Report of the Mortality Records of the Mutual Life Insurance Company of New York from 1843 to 1898. By Elias J. Marsh, M.D., and Granville M. White, M.D., Medical Directors. Published by the Mutual Life Insurance Company of New York.

Cancer of the Uterus; Its Pathology, Symptomatology, Diagnosis, and Treatment. By Thomas Stephen Cullen, M.D., (Toronto). Illustrated. D. Appleton & Company, New York.

Medical Diagnosis. A Guide to the Knowledge and Discrimination of Disease. By J. M. Da Costa, M.D., LL.D. Illustrated. Ninth Edition, Revised. J. B. Lippincott Company, Philadelphia and London.

Food for the Sick and How to Prepare It. With a Chapter on Food for the Baby. By Dr. E. C. French. 12mo., 171 pages. John P. Morton & Company, Louisville. $1.00.

Contributions from the William Pepper Laboratory of Clinical Medicine. Dr. Alfred Stengel, Director. Quarto, 480 pages. Illustrated. University of Pennsylvania, Philadelphia.

Transactions of the Associated Physicians of Long Island. June, 1898, to January, 1900. Vol. I. 8vo., 142 pages.

Normal Histology. By Dr. E. K. Dunham. Second Edition. 8vo., 319 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York.

A Manual of Medicine. Edited by Dr. W. H. Allchin. Vol. I. General Diseases. 8vo., 442 pages. Illustrated. The Macmillan Company, London and New York. $2.00.

Mikroskopie und Chemie am Krankenbett. Von Dr. Hermann Lenhartz. Dritte Auflage. 8vo., 360 pages. Illustrated. Julius Springer, Berlin.

Contributions to the Science of Medicine. Dedicated by his pupils to William Henry Welch on the Twenty-fifth Anniversary of his Doctorate. Quarto, 1066 pages. Illustrated. The Johns Hopkins Press, Baltimore.

A Text-Book of Practical Therapeutics. By D. Hobart Amory Hare. Third Edition. Thoroughly Revised and Rewritten. 8vo., 798 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York. $4.00.

A Memoir of Henry Jacob Bigelow, A.M., M.D., LL.D., In four volumes. Volume I., Memorial Addresses of Friends and Associates; Volume II., Orthopedic Surgery and Other Medical Papers; Volume III., Dislocations and Fractures of the Hip, Litholapaxy; Volume IV., Anesthesia, Addresses, and Other Papers. Little, Brown & Company, Boston, 1900.

Grundriss der Theorie und Praxis der Schattenprobe (Skiaskopie.) Von Dr. Otto Neustaetter. 12mo., 59 pages. Illustrated. J. F. Lehmann, Munich. 1 mark 20 pf.

Transactions of the Chicago Pathological Society. From May, 1897, to June, 1899. Vol. III. 8vo., 553 pages. Illustrated.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

COCAINE ANESTHESIA BY LUMBAR PUNCTURE: TWO CASES OF HYSTERECTOMY.

By J. RIDDLE GOFFE, M.D.,
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THE success that has attended the intraspinal injections of cocaine for the purpose of producing anesthesia of the lower half of the body aroused no little enthusiasm at the recent International Medical Congress. Indeed, it was considered one of the prominent advances in surgery worthy of record on that occasion. The credit of demonstrating the advantages of this method of anesthesia in surgery is due to Professor Bier of Kiel, but Tuffier of Paris and Kreis of Bucharest have used it in a greater number and a wider variety of cases. The experience of all these men shows pretty conclusively that the method is successful in producing complete analgesia during operations extending over a period of two hours, and that the benumbing effect of the drug gradually wears off in the course of three or four hours, sometimes continuing a little longer. The immediate effects are no more disagreeable than those of ether or chloroform and are entirely devoid of danger. What remote consequences may develop as the result of such interference with the spinal fluid and the intraspinal pressure that this method involves can only be determined after more prolonged observation. Up to the present time, however, no detriment to the patient has attended the procedure, although observations have extended over a period of two years. The amount of the drug used varies from one-twelfth to one-half of a grain, but the usual dose is one-sixth or one-third of a grain. The analgesic effect extends usually from the toes to the umbilicus and operations may be performed with immunity to pain on any parts below the latter point.

Prompted by the experience of these men and by the success of Dr. Marx[1], of New York, with the method as applied to obstetrics, I have ventured to use it in two cases as follows:

Case I.—Vaginal hysterectomy, August 27th. Mrs. R., aged forty-eight years, the mother of nine children, a widow for the past six years; had both uterine appendages removed by laparotomy three years ago. She has suffered from constant backache and pain since the operation and is not able to work. The heart, lungs and kidneys were found normal and hysterectomy was advised. The patient gladly consented to the use of the new method of anesthesia, when it was explained to her, for she said she had suffered terribly from nausea and vomiting from ether at her previous operation. The patient was placed in the Sim's posture, the body being well flexed, and the skin of the lumbar region was thoroughly scrubbed. The spine of the fourth lumbar vertebra was then located and permanently retained by pressing firmly upon it the ball of the left thumb. The empty hypodermic needle, unattached to the syringe, was then inserted into the tissues on the patient's right just at the edge of the thumb and pushed steadily forward, inward and upward, until the spinal fluid was seen to appear and finally drop from the end of the needle. In this case the needle was forced in to a distance of three inches (it is best to use a needle about four inches long) and fifteen drops of the fluid were allowed to escape. The syringe was then attached and thirty minims of a two-per-cent. sterilized solution of cocaine were injected. In two minutes the patient described a tingling sensation in her feet and legs, and almost immediately insensibility to the prick of a pin appeared in the extremities and gradually advanced until it reached the fourth dorsal vertebra in the back and a point above the breasts in front. There was some excitement on the part of the patient, due partially to the intense interest felt by all in the experiment, the pulse running up to 104 and the respirations to 36. Vaginal hysterectomy was then performed, the angiotribe being used as the hemostatic, the patient being ready for bed in thirty minutes. The crushing of the vessels and nerves by the angiotribe was probably as severe a test of the analgesic effect of the method as could be applied, and yet the patient felt no pain or discomfort, simply reminding me from time to time that I agreed not to cut her, *i. e.*, incise the abdomen. About fifteen minutes after the injection profuse sweating occurred (such as often attends ether narcosis), followed by considerable nausea with slight retching and vomiting. A severe headache came on during the operation and continued until 9 P. M., about ten hours. The patient was conscious throughout the entire procedure, spoke frequently and asked questions. An hour after the operation she said she was more comfortable than at the same epoch in her previous operation. The patient has had a smooth, normal convalescence.

Case II.—Abdominal hysterectomy, August 31st. Miss D., single, aged fifty-one years, suffering from hemorrhages due to multiple fibroids of the uterus. The patient had a hydrocephalic head and a kyphotic pelvis. The patient was placed in the Sim's posture and the back prepared

[1] MEDICAL NEWS, July 28, 1900.

as in the previous case. Owing to the ankylosis of the lower lumbar vertebræ some difficulty was experienced in entering the subarachnoid space and two or three unsuccessful attempts were made. Finally, the needle was introduced in the third lumbar space, the spinal fluid appeared in the needle and one-third of a grain of cocaine was injected. Analgesia was very imperfect and fifteen minutes later the needle was inserted in the second lumbar space, twenty-two drops of spinal fluid were allowed to escape and one-third of a grain of cocaine was injected. Analgesia promptly appeared, reaching above the umbilicus. An incision was made through the right rectus muscle and supravaginal hysterectomy was performed in accordance with my method of covering the stump with peritoneal flaps, the angiotribe being used as the hemostatic on the broad ligaments. The operation occupied forty minutes. The sweating, nausea, vomiting and headache occurred as in the previous case. The vomiting recurred on the following day. In this case the analgesia was not as complete as in the former and recovery from the effects of the cocaine came so promptly that the last manipulations in the operation, the removal of sponges from the abdominal cavity and the sewing of the wound, gave occasional twinges of pain. The recovery has been uneventful.

As fas as I know these are the first operations, aside from the obstetric experience of Dr. Marx, that have been attempted according to this method of anesthesia in this country, and it is quite possible that the abdominal hysterectomy is the first on record anywhere. At least I can find no mention of this operation in the list of surgical procedures reported in Europe, although those lists include vaginal hysterectomies, appendectomies, vaginal sections and herniotomies.

A CONSIDERATION OF FINGER INFECTION WITH SPECIAL REFERENCE TO THE JOINTS AND TENDONS.

By ELLSWORTH ELIOT, Jr., M.D.,
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Inoculation of different portions of the body by some variety of pyogenic organism is of frequent occurrence. In certain cases the germ is carried to the affected area by the blood or lymph-channels, although the exact mode of its entrance into the body interior is uncertain; more frequently the inoculating material is introduced directly into tissue space through some abrasion. This obviously is of most frequent occurrence in the extremities, which, from the personal occupation or habit of the patient, are most likely to come in contact with contaminating objects. The fingers, consequently, are particularly subject to wound infection. This predominates in the palmar surface of those most frequently called into use.

The results of such infection depend on the resistance which the body is capable of presenting to the invading germ. In individuals of strong, robust temperament, such a process usually remains circumscribed; in those, on the other hand, of feeble powers, whether from disease, as for example, diabetes, or inherent weak vitality, any infection shows a tendency to become diffuse, involving not only the adjacent surface of the body but spreading more or less quickly to the structures more deeply seated. The course and development of infection depend also on the virulence of the invading germ, as well as on the quantity introduced. If a large number simultaneously enter the body or if the germ is particularly virulent, the resistance presented by even a robust individual may not be sufficient to prevent the rapid extension of the process, and at times the overpowering of the entire system by the toxic products of the pyogenic germ.

Cases of wound infection in the fingers consequently vary greatly in the extent of damage to the structures involved. In the mildest forms the process is limited to the skin and the subcutaneous tissue with but slight if any constitutional disturbance, and results in the necrosis of a limited portion of tissue, which may either be removed by lymphatic absorption or may be discharged from the surface of the body by the progress of suppuration, a rapid recovery ensuing.

In more severe cases, however, access of the pyogenic organism to the tendon sheath takes place; an acute necrotic inflammation fills and distends the sheath with pus, the extent of which depends on the particular sheath involved. The sheaths of the index, middle and ring fingers are separate from the common palmar sheath, and infection involving these sheaths rarely extends beyond the finger proper; on the other hand, the sheath of the long flexor of the thumb invests the tendon in a prolongation, which, occasionally communicating with the common palmar sheath, extends under the annular ligament to the lower part of the forearm. Infection of this sheath is quickly carried along the course of the tendon, and not infrequently extends into its muscle belly. In the large majority of cases, which have come under my notice at the Vanderbilt Clinic and elsewhere during the past ten years, the common flexor palmar sheath, notwithstanding its close proximity to the flexor sheath of the thumb, particularly as they lie under the annular ligament, escapes damage. Infection of the sheath of the little finger is also carried along the prolongation of the sheath of that tendon into the palm, where it involves the common palmar sheath.

On the dorsal surface of the fingers the arrangement of the sheaths of the extensor tendons is irregular and infection is uncommon. In one case of infection of the extensor tendon of the little finger, the process extended to the dorsum of the hand, remaining confined, however, to the original tendon.

No matter what tendon involved, the pathological process is identical. The sheath becomes distended with pus, which impairs both its vitality and that of the sheath; eventually rupture allows the escape of the pus, but only rarely does the tendon escape necrosis. Usually the resulting tendon-slough separates from its viable part above and below, and is discharged from the wound which shortly after heals by granulation, leaving a finger the function of which is permanently impaired. In these cases of tendon infection the germ gains access to the sheath, either directly through a penetrating wound or indirectly through lymphatic channels that open into the sheath. It is therefore possible for tendon infection to develop as a complication of a wound that does not even extend through the subcutaneous tissue.

The clinical aspect of finger infection is, in certain cases, materially governed by the involvement of one of the metacarpophalangeal or of one of the interphalangeal joints. A complication of this nature may result from the introduction of the agents of infection through a wound penetrating the joint or, as is the case with tendon infection, the germ may be carried from the original focus, involving only the subcutaneous tissue, by a lymphatic vessel directly into the joint cavity.

The pathological changes resulting from joint infection are best understood by dividing the process into the following stages: (1) Stage of joint distention. (2) Stage of joint disintegration. (3) Stage of repair.

In the first stage the entrance of the germ is followed by the development of an acute suppurative inflammation, distending the synovial cavity with pus. The articular ends of the bone are the site of an acute ostitis, the extent of which depends upon the severity of the process. In the second stage the capsular ligament yields to the pressure of the accumulated pus within, and allows its escape into the periarticular structures, which it penetrates, reaching the skin in the direction of least resistance through an insufficient orifice. At the same time the inflammatory ostitis has resulted in the necrosis of the articular surfaces, first shown in the complete or partial denudation of the articular cartilage. The advent of the third stage depends on the freedom of joint drainage; in it the necrotic portions of bone, cartilage, ligament and synovial membrane gradually separate from adjacent viable structures and as these discharge from the wound a cavity remains, lined by granulation tissue, into which the extremities of the viable portions of the phalanges project. This cavity gradually fills and heals by granulation. If the above-mentioned bony extremities are placed in contact bony ankylosis results; if they remain apart fibrous ankylosis usually develops. Occasionally the formation of a false joint permits partial restoration of joint movement.

In this group of cases the infection of the joint may be the sole complication of the infected wound, or, and this is not infrequent, the tendon sheath is simultaneously involved. This latter structure may rarely become secondarily involved by the entrance into it of the pus which escapes through the giving away of the capsular ligament of the joint. When the process of repair is complete the destruction of the bone results in a permanent shortening of the finger. In one of the cases reported (*Case IV.*) this took place without the exfoliation of any recognizable fragment of bone. This demonstrates the fact that, after the necrosis of the articular ends, the disintegration of the bone may be so gradual that the process of sequestration is accomplished without the appearance of any bony fragment whatsoever in the dressing.

Pyogenic infection of the extracapsular portion of phalanx or metacarpal bone in conjunction with infected wounds of the fingers occurs only when the original injury has penetrated directly to and involved the bone. It occurs most frequently in compound fractures, where the infection is followed by an osteomyelitis, resulting in a moderate amount of necrosis, the union of the fragments being delayed until the process of sequestration is complete. Occasionally, in the case of infected wounds penetrating to the bone without fracture, a similar process develops which is generally limited to the periosteum and the contiguous superficial portion of the bone.

These different pathological conditions of infected wounds of fingers have been described to emphasize the fact, that, although infection of a joint may be the only complication, it is not infrequently associated with and its clinical picture modified by the infection of the adjacent tendon sheath, while the development of the pathological process in the subcutaneous tissue, always variable, may be so marked as to render the diagnosis of an accompanying joint infection a difficult matter.

The clinical picture of a joint infection is therefore usually complex, and the consideration of its symptoms includes not only those relative to the joint, but also, very frequently, those belonging to an associated tendon-sheath infection, as well as those due to the involvement of the overlying soft parts. As far as the joint is concerned, the symptoms include those of joint penetration and secondly those of joint infection.

The symptoms of joint penetration consist in the observation by the patient or the surgeon of the escape from the wound of synovia in the form of a small amount of tenacious, viscid and glairy fluid, which, at first transparent, becomes with the advent of infection discolored and diminished in quantity and irritates the surrounding parts. With the onset of inflammatory changes, symptoms due to the infection of the soft parts and of the joint cavity develop simultaneously, the former being more prominent and frequently masking the latter.

In the absence of joint complication the infection of the soft parts is marked by pain, most in-

tense over the point of puncture, with redness and swelling, which, most marked over the original area of infection, gradually shades off into the surrounding parts. The simultaneous involvement of the joint alters these symptoms in the following way. The pain is more severe and is usually intensified almost beyond endurance by any movement of the joint no matter how slight. The swelling becomes much more pronounced and involves the entire circumference of the finger over the joint, instead of remaining confined to the location of the wound. That portion of the general swelling which is due to the distention of the joint is more tense and elastic than the remainder, and over the dorsal aspect of the finger, where the overlying tissues are thin the outline of the distended synovial cavity is sometimes plainly visible.

If the infection is limited to the subcutaneous tissue, the active function of the finger is impaired; if the joint is involved, however, there is complete abrogation of its function and any passive movement elicits excruciating pain. These are in brief the local symptoms of joint infection in the stage of joint distention. In addition the patient develops the constitutional symptoms of fever, of which the onset is sometimes preceded by a chill of an intensity which varies with the nature of the infection.

With the destruction of the capsular ligament, the pus, previously confined within the limits of the joint, speedily finds a means of exit, and its discharge is followed by a partial subsidence of the constitutional symptoms, as well as by the following local changes. The swelling in the soft parts practically disappears; the swelling due to the joint involvement is, consequently, more prominent and, owing to the involvement of the articular ends of the bones and their periosteal coverings to which the inflammatory process has extended, is so pronounced that the circumference of the finger at that point is at least doubled. This swelling subsides very slowly as the process of sequestration results in the gradual discharge of the diseased bone.

The destruction of the lateral portions of the capsular ligament furnishes a pathognomonic symptom in the presence of a preternatural mobility, elicited usually without pain by moving the phalanges on each other from side to side. In the great majority of cases this movement produces a crepitus, due to the rubbing together of the roughened articular ends, which have been partially denuded of their cartilage. Its quality is similar to that of the crepitus of fracture. Active function of the joint is lost in this, the stage of joint destruction, although passive movements of flexion and extension may be made without causing marked pain.

Through the sinuses communicating with the interior of the joint a probe may be passed into the joint cavity and with it the roughened denuded area in the articular cartilage may be detected. It also not infrequently reveals the fact that the adjacent portions of the phalanx are bare and very extensively thickened. These areas do not always undergo exfoliation, but sometimes subsequently become covered with granulation tissue, over which cicatrization takes place, the bone, however, usually remains permanently thickened.

During the process of repair the fever entirely subsides and the joint crepitus, as well as the bare roughened bone, disappears, when, after the discharge of all necrotic material, the remaining viable phalangeal extremities become invested with the soft granulation tissue, which gradually fills the original joint cavity. After cicatrization is complete propagation of connective tissue may either connect the bones in fibrous ankylosis, or in favorable cases a new capsular ligament may be formed, enclosing a pseudarthritic cavity, as in *Case II.* In other cases the bony extremities are united in bony ankylosis. Whether the ankylosis is of the fibrous or bony variety, the finger is placed in a position of flexion from the contraction of the stronger set of muscles, unless the surgeon, in the process of treatment, has seen fit to maintain the position in some other more desirable angle by the application of suitable splints.

There are other cases of interphalangeal inflammation in which the symptoms are varied by the involvement of the overlying tendon-sheath. Under these circumstances to the swelling due to the involvement of the soft parts and the joint is added a deeper swelling. This extends in both directions parallel to the tendon sheath, is elongated in shape and owing to its being confined beneath non-yielding connective-tissue, is deeply elastic to the touch.

The position of the extremity is determined by the contraction of the tendon involved and any attempt to antagonize its action elicits most intense pain, resembling a similar symptom in joint involvement, where passive movement can scarcely be endured by the patient. It may be differentiated by the fact that the tendon may be placed on the stretch by the passive movement of a joint that is free from inflammation, while the joint involved is temporarily immobilized; thus, if the metacarpophalangeal joint only is involved, passive movement at that joint causes severe pain; passive movement at either of the distal interphalangeal joints is painless, provided that the metacarpophalangeal joint is fixed. If, however, the flexor sheath is involved, passive movement at either of these normal joints is sure to cause pain because by that movement the inflamed tendon is elongated, while the pain due to the inflamed metacarpophalangeal joint is excluded by temporary fixation of that joint.

The presence of this complication is easily detected by the spreading of the swelling toward the belly of the tendon, even before the pus reaches the surface. With the rupture of the abscess, the diagnosis is rendered certain by the appearance of the sloughy tendon in the abscess cavity.

The subsequent separation of the necrotic por-

tion of the tendon is accompanied by a radical change in the position of the finger. If, for example, the flexor tendon of the index finger has been involved it has been strongly flexed in the early stages of the inflammation, less strongly flexed when the pus reaches the surface, and when separation of the slough takes place, the extensor tendon, without check, hyperextends the finger precisely as if the healthy flexor tendon had been divided in an incised wound. Passive flexion is still allowed in the phalangeal joints, but as soon as the pressure is withdrawn the tip of the finger is pulled back by the contraction of the extensor tendon. This impaired function is permanent as nature does not replace the destroyed tendon. The occurrence of suppuration in the tendon sheaths intensifies the constitutional disturbance accompanying the process of infection, and in cases in which this process is extensive may threaten the life of the patient from toxemia.

Treatment.—The treatment of these cases of finger-joint infection depends on whether the joint alone or the tendon sheath in addition is involved. The principles observed in both cases are indentical. The application of suitable dressings to the part, which is kept elevated and in absolute rest, is reinforced by incisions which allow generous drainage and thereby prevent the retention of any foul material in the area of inflammation.

In the case of joint involvement the incisions should be on either side, made if possible where the joint is most superficial, thoroughly exposing the synovial cavity and the articular ends of the bone, avoiding, naturally, any adjacent normal tendon sheath. In severe cases the drainage of the joint cavity is still further facilitated by the resection of the articular extremities of the bone.

Absolute rest is afforded by the application of a suitable splint which extends above the wrist on the palmar surface. Wet dressings of aluminum acetate or of aqueous solutions of carbolic acid, 1 to 60, or of bichloride of mercury, 1 to 10,000, may be utilized in the early stages of the infection. Recently, in the Vanderbilt Clinic, a ten-per-cent. aqueous solution of ichthyol has been used with advantage. In the severer types the inflamed part may be continuously immersed in a bath containing any one of these solutions, preference being given to the aluminum acetate.

In those cases in which the nature of the infection is such as to cause serious toxemia, the patient must be kept in bed and subjected to the usual constitutional treatment of this condition, the local measures already outlined being carried out as early as possible after the onset of the infection, the necessary incisions for the relief of the tension being most efficacious when they are made through the entire area of infection in length, breadth and depth.

The severest type of finger-joint infection is seen in those virulent cases in which local gangrene of the entire finger develops while the process rapidly extends along the extremity to the elbow and axilla. In these cases amputation is the only remedy and must be done without delay if the life of the patient is to be saved. This measure, by removing *en masse* an area crowded with germ activity and their toxic products, diminishes the virus, which it is necessary for the organism to destroy or eliminate if recovery is to take place. In favorable cases it is followed by the subsidence of both local and constitutional symptoms. While providing proper local treatment in these serious cases of infection, the general septic condition of the patient must receive careful attention, the indications being chiefly to promote the excretory power of the organs of elimination, while the general system must receive the support of generous doses of alcohol and, if necessary, of other stimulants.

In from one to three weeks, according to the degree and extent of the infection, the process of destruction comes to an end and is followed by the stage of repair. The separation of sloughy from viable tissue can best be hastened by the daily irrigation of the abscess cavities with peroxide of hydrogen, followed by the application of gauze soaked in a liquid balsam of Peru. Proper immobilization of the joint should still be maintained in that position in which, if ankylosis takes place, the finger will prove most useful to the patient. This process of repair requires an average interval of two months before healing is complete. If at the end of this rather protracted period complete restoration of the function of the part could be promised, the sacrifice of the finger would never, except in the severer type of cases already mentioned, have been a subject for debate; but, unhappily, in the majority of cases of joint infection a stiff finger results which very greatly impairs its future utility if, indeed, the finger is not actually in the patient's way. With such an unfavorable prognosis, is not the amputation of the part, as soon as the involvement of the joint is a certainty, to be greatly preferred to the conservative plan of treatment? This I maintain is a question for the patient and not for the surgeon to decide, as long as the retention of the finger is without risk. Some patients, including those encountered in the dispensary, prize very highly a finger that is stiff and worthless; other men, belonging to the laboring classes prefer to resume active work as soon as possible, the loss of an extra two months of daily dressing necessitating the incurring of debt and the suffering of hardship. Under these circumstances amputation is always to be advised, if the process involves unimportant fingers.

The advantages of the conservative plan of treatment, which it has been my custom to present to patients applying for treatment of these infections, is that, in the first place, there is a slight chance of their obtaining a movable joint. In other words there is a chance for the complete restoration of function when the joint only is involved; secondly, that if stiffness results the finger may yet prove serviceable, particularly in

the case of the thumb and of the index finger, and that, if they can afford to wait until the part is entirely healed, the finger can then be sacrificed if it proves useless. At least four-fifths of the patients selected this conservative plan of treatment. The finger may prove most useful, even stiff, if the proper angle of ankylosis is established by the surgeon. In one of the cases reported (*Case I.*) the patient, a mason by occupation, found the right index finger very useful in his daily work, although the metacarpophalangeal joint was completely ankylosed as a result of an infection of three months' duration. The angle of ankylosis was established at 135°, which enabled the patient to accurately direct the point of one of his tools.

If the joint infection has been accompanied simultaneously by a similar process in the tendon sheath, restoration of function is, of course, impossible. If the infection of this nature has involved the 3d, 4th, or 5th fingers, amputation is desirable unless the patient desires the preservation of the finger for cosmetic reasons. The importance of the preservation of the index finger or thumb, if involved, demands conservative treatment. If, with the destruction of the tendon, the metacarpophalangeal joint is intact, the patient can be assured of the restoration of function of flexion of the first phalanx, through the action of the lumbricales, inasmuch as the destruction of the tendon rarely occurs beyond the origin of the muscle; when, however the joint, as well as the adjacent tendon sheath, is involved, a stiff finger only can result, the utility of which time alone can demonstrate.

The following cases are selected from a large number and their histories are related with the intention of presenting the different clinical features of joint and tendon infection:

Case I.—J. S.; mason; thirty-five years of age; November, 1893. Two days ago, in an altercation, the patient struck a man in the mouth, receiving a punctured wound over the posterior aspect of the right metacarpophalangeal joint from one of the incisor teeth. From this puncture the patient noticed the escape of a small quantity of viscid, tenacious fluid. Within the next twenty-four hours he suffered an increasing amount of pain, intensified by any attempt to move the finger, the position of which gradually became more and more fixed. At the same time the parts around the wound became red, swollen and tender. He was unable to sleep at night and lost his appetite. He had some fever but did not have a chill. On examination there was considerable swelling in the vicinity of the right metacarpophalangeal joint of the index finger, extending upward along the dorsum of the hand and downward toward the tip of the finger. Over the joint proper there was a small punctured wound of sloughy appearance, from which a small amount of seropurulent fluid issued. The swelling was red and elastic over the situation of the joint, tenderness being elicited around its entire circumference. The finger was in flexion and any attempt to produce extension caused severe pain. There was complete abrogation of function. There was moderate elevation of pulse and temperature.

Under nitrous oxide gas incisions were made over the laterodorsal aspect of the joint, the cavity of which was found to be moderately distended with seropurulent fluid. The cartilaginous extremities were intact and the capsule in a healthy condition. The joint was washed out with an aqueous solution of bichloride of mercury, 1 to 10,000, drained with strips of iodoform gauze, and immobilized by a splint at an angle of 135°. The patient made an uninterrupted recovery, although the process of repair required three months. At the end of that time the sinuses had completely closed without the exfoliation of any bone, leaving a joint the site of fibrous ankylosis, with absolutely no movement. The angle of fixation, however, enabled the patient to satisfactorily use the finger in his daily work.

This case is an example of a frequent mode of infection. A punctured wound, inflicted by a man's tooth allowed the infectious material present on the tooth to enter the wound if not the joint. Such cases are invariably severe, require a long time before healing takes place, and invariably result in ankylosis of the joint.

Case II.—B. C.; twenty-one years old; laborer; March, 1894. Four days ago the patient received a punctured wound from a rusty nail over the dorsal aspect of the second interphalangeal joint of the right middle finger. This was followed by severe pain and loss of function, the patient being unable to move the finger, as well as by the usual symptoms of inflammation around the site of the wound for which the patient sought relief at the Vanderbilt Clinic. Examination showed a small sloughy orifice of a punctured wound, over the dorsal aspect of the above-mentioned joint, discharging pus; around it the swelling was so pronounced that the circumference of the finger was double that of its normal fellow. There was considerable thickening of the terminal phalanx. A probe passed into the cavity of the joint touched smooth, bare bone. There was abnormal lateral mobility of the joint due to the insufficient lateral ligaments, and with this movement smooth crepitus was elicited.

Operation under nitrous oxide. A free incision was made over the laterodorsal aspect of the joint, the cavity of which contained a small amount of purulent fluid. The articular cartilage of the terminal phalanx was markedly denuded, that of the second phalanx smooth and glistening. The tendon sheaths were normal. Irrigation of the joint cavity with a solution of bichloride of mercury, 1 to 10,000, drainage with a strip of iodoform gauze, and immobilization with the customary splint. A wet dressing of aluminum acetate was applied. The operation was followed by the subsidence of the local symptoms and by the speedy establishment of the process of repair. The terminal phalanx became ex-

foliated and was removed at the end of the third week; rapid healing was completed during the fourth week. The splint was then removed and the patient allowed to move the finger at will. The movement was gradually restored and at the end of the second month the patient declared that the function of the finger was as good and as strong as formerly.

This case illustrates an infection of a minor joint in which the entire phalanx became necrosed, and notwithstanding this complete function was restored. This fortunate result was probably due to the fact that the articular cartilage of the second phalanx did not become denuded and, therefore, favored the formation of a new joint. It must be stated, however, that the perfect restoration of function in this way is very unusual; occasionally the surgeon obtains a partial restoration of function.

Case III.—M. C.; twenty-five years old; March, 1897. Ten days ago the patient struck a man in the jaw. This was followed, according to the patient's story, by the appearance of the usual symptoms of inflammation over the dorsal aspect of the right index finger. Poultices were applied and after four days an abscess opened spontaneously, discharging a considerable quantity of pus. Since that time the swelling has persisted, the hand was still useless, and patient sought advice at the Vanderbilt Clinic. Examination showed marked inflammatory swelling over the dorsal aspect of the hand and the radial side of the right index finger. Over the metacarpophalangeal joint of the index finger, there were several sinuses which communicated with the interior of the joint cavity, the probe touching roughened bone. There was abnormal lateral mobility and with this lateral motion a rough, harsh crepitus was elicited. Patient had a moderate increase of temperature and elevation of the pulse.

Operation under cocaine. Incision, three inches in length on the dorsal aspect, exposing the joint and extending upward through the area of exudation. The usual irrigation was practised and the incisions were packed loosely with iodoform gauze. Joint immobilization. On the following day the constitutional symptoms had increased in severity and the local symptoms, not having perceptibly diminished, the patient complained of greater pain, ether was administered and the ends of the roughened articular bones removed, a counteropening was made on the palmar surface of the joint, without disturbing either the extensor or the flexor tendon, and iodoform gauze was introduced through the opening thus made. This operation was followed by a subsidence of both the local and the constitutional symptoms and in the course of the next three weeks the process of repair had become well established. Two months afterward the palmar incision had entirely healed, and there remained only a persisting sinus over the joint that discharged a small amount of pus for two weeks longer. When the parts had entirely healed fibrous ankylosis remained with the joint in a position of slight flexion.

This case is of interest, because it was not subjected to suitable treatment until ten days after the infection had taken place. With this disadvantage, it was still possible to save the finger, although satisfactory drainage was not obtained until the joint was opened anteriorly, the articular ends of the bone removed simultaneously, and the amount of infecting material thus decreased. When the patient resumed work, the finger, although stiff, was sufficiently useful to make its retention desirable.

Case IV.—S. B.; thirty-two years of age; broker. Twelve hours previous to examination, while bathing, a small fragment of glass became imbedded in the palmar surface of the right middle finger, over the junction of the first and second phalanges. This the patient removed with an old razor. Several hours later he developed a chill and a sudden rise of temperature, and simultaneously the finger began to swell and became excruciatingly painful. Examination showed a moderately swollen finger which presented upon both dorsal and palmar aspects numerous inoculating reddened bands, extending up on the dorsum of hand and lower forearm. At the site of the puncture there was a small quantity of pus and about it the swelling was extremely tense and painful. There was complete loss of function, the finger being fixed in flexion. Temperature 104.5° F.; pulse 120.

Operation under local anesthesia by means of ethyl oxide. A crucial incision was made through the area of infection and others at the lateral aspects of the junction of the palm of the hand and the finger. A very small quantity of pus was evacuated at the point of infection. Elsewhere the incisions passed through thickened skin into normal subcutaneous tissue. There was not any evidence of joint or tendon-sheath involvement. The incisions were packed with iodoform gauze and a wet dressing of aluminum acetate was applied, the limb being supported upon a pillow. During the next three days the temperature and pulse continued high and at times there was slight delirium. Locally the swelling increased and showed a tendency to involve the lower part of the palm of the hand, as well as the dorsal region over the vicinity of the metacarpophalangeal joint. Another incision under cocaine was made in this latter situation without, however, finding any pus. The extensor sheath was exposed and found to be normal. On the following day pus issued through the side of this incision coming from an abscess cavity anteriorly, which, opened, was found to embrace the sheath of the flexor tendons. This abscess cavity formed a communication with the original incision at the point of infection. With the exit of the pus, the constitutional symptoms subsided, and the patient's general condition improved. The drainage from the suppurating tendon sheath was at first satisfactory, but at the end of the second week considerable oozing

of blood took place from the wound, an evidence of insufficient drainage, and in order to correct this the two palmar incisions were connected, thus exposing the entire suppurating tendon-sheath cavity. There was still further subsidence of the constitutional symptoms, the temperature and pulse reaching normal at the end of the fourth week. At about the tenth day suppuration appeared in the joint between the first and second phalanges, and the second phalanx itself became extensively swollen and denuded. Drainage was, however, satisfactorily accomplished through the long anterior incision, and no perceptible exfoliation of bone took place. The anterior surface of the corresponding metacarpophalangeal bone also became denuded, but subsequently became covered by granulation tissue. At the end of the sixth week the sloughy tendon sheaths had separated from their viable portions, that of the sublimis being the first to come away. At the end of the tenth week the healing process was complete. The finger was shortened half an inch and the joint between the first and second phalanges was in a condition of fibrous ankylosis in a position of slight flexion.

This case is one of unusual interest. Originally the infection was introduced a short distance only beneath the skin and from this point, notwithstanding early and extensive incisions, the infecting material was carried not only into the tendon sheath, but also into the joint. The separation of necrotic tendon required several weeks longer than usually is the case; in fact, at one time it was hoped that notwithstanding the suppurative tenosynovitis the viability of the tendon might be preserved. The arthritis behaved in a very peculiar way. The second phalanx was double its normal size and denuded through a considerable part of its extent, yet exfoliation did not take place *en masse*, although that there must have been some gradual loss of bone is demonstrated by the permanent shortening of the finger. The thickened condition of the phalanx persisted months after healing was complete. The occurrence of secondary hemorrhage was an indication merely of insufficient drainage of the abscess cavity. This demanded the joining together of the incisions on the anterior aspect of the finger and lower palm of the hand, a procedure which is usually necessary before the abscess cavity will heal.

THE PREVENTION AND TREATMENT OF "COLDS."[1]

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The term "cold" is vaguely and indefinitely used by the masses to designate a morbid affection supposed to be due to the action of cold. It is most frequently applied to an inflammatory process involving the upper air passages and attended by sneezing, congestion and irritation of the nasal mucous membrane, and discharge from the nostrils, with or without soreness of the throat, hoarseness and cough.

That this affection has earned for itself the title of "cold" would lead us to believe that this agent is the most important factor, if not the only one in the development of this condition. It is an accepted fact, however, that the hunter, the soldier in camp-life, and others, who live chiefly out of doors, and are exposed to all the inclemencies and changes of the weather, are rarely affected with colds, whilst those living in houses containing the most modern appliances for preventing the access of cold, and wearing the warmest of woolen clothing, are exceedingly prone to this affection. In fact, it would appear that the higher the point to which these artificial conditions are carried the more disposed the subject is to suffer from its effect.

We must admit, therefore, that whatever effect cold has, it is certainly not the most important factor in the development of coryza. On the contrary, the overheated rooms and the heavy woolen clothing relax the skin and moisten it with perspiration and thus decrease its normal resistance to thermic and hygrometric changes, so that the least draft or change of temperature makes the patient liable to this affection. In addition to this, the lack of ventilation and of ordinary sanitation, added to the predisposing effect of repeated attacks of coryza, tends to disorganize the nasal function of respiration where this is not already affected, and which may form an important etiologic factor in the development of recurrences.

Coryza is of such frequent occurrence and plays so important a rôle in the development of other affections that the subject merits the most careful consideration, especially as the most diverse opinions exist as to its etiology and treatment.

In this affection, as in all others, prophylaxis is of the first importance. Overheated rooms should be avoided, especially those heated by means of steam or hot water, in which the change of air which is incident to the use of the grate, stove or fireplace, does not take place. The clothing should not be too heavy or warm, as this is as liable to cause a coryza as the opposite extreme. I would call special attention to this, as the majority of patients believe themselves to be proof against "taking cold" in the direct ratio of the amount of material they wear. They do not realize that the excess of clothing induces moisture of the skin, and that this, on evaporating, abstracts considerable heat from the body, and also that it interferes with the active functions of the heat centers. It is on this account that wraps, overcoats, etc., should be removed when entering a warm room, otherwise a coryza is easily contracted when the wearer is again exposed to cold or wind.

One of the most useful methods of preventing coryza is the use of the cold shower-bath. The patient should take a warm shower-bath, using

[1] Read before the Louisiana State Medical Society, April, 1900.

soap and rubbing briskly to cleanse and stimulate the skin. This should be followed by a cold shower-bath, the temperature being from 50° F. to 70° F., according to the tolerance of the patient. The systematic and regular use of this method stimulates not only the skin but the whole vascular and nervous system and prepares the subject against the sudden meteorologic changes which are so frequent in our climate. The surface of the body being already accustomed to sudden changes of temperature, easily reacts when these are due to the usual natural causes.

In connection with the subject of prophylaxis I must call attention to the importance of having the nasal passages in a normal condition. We are familiar with the physiologic rôle which these play in the respiratory act. They moisten, warm and cleanse the inhaled air, thus protecting the more delicate structures below them from the irritation which would result were this not the case. We demonstrate the necessity of this when, after a tracheotomy in which the nasal function in respiration is abolished, we are compelled to warm and moisten the air of the room, as otherwise the patient would quickly develop an acute bronchitis with possibly a fatal ending, owing to the fact that the air inspired through the tracheotomy-tube has not been prepared by the nostrils for respiration.

With reference to the constitutional treatment, there is no subject about which there exist so many fallacies. The number of remedies which have been recommended for the cure of coryza are legion, while practically there are but few which have any real therapeutic value. One of the most common is quinine sulphate, which is used not only for its supposed prophylactic action in this affection, but also in all stages of its development. My experience and observation has taught me that this drug has little or no effect in this connection, its supposed value being due to the fact that but few persons are really able to recognize the initial stage of a coryza. If the patient sneezes, has a slight congestion in the nostrils, or feels an irritation in his throat, all of which may be due to some transient local condition or to dust or other impurity in the inspired air, he takes five to ten grains of quinine, and when no cold appears the next day, the drug receives the credit, whereas the probability is that no coryza was impending. I have frequently tested this effect and have been compelled to abandon quinine as a prophylactic agent in coryza.

After the initial stage of the coryza has developed, and after a large dose of quinine is taken, it is true that the drug appears to modify, for a time at least, the usual development of the coryza. We must remember, however, that quinine is an irritant, in fact a toxic agent, otherwise it would have no value in the therapeusis of malarial fevers; when, therefore, a large dose is taken, the system exerts itself to expel a source of irritation greater than the one developed in the upper respiratory organs and in this way it relieves for the time being the congestion and inflammation in the same manner that a vesicant acts as a counterirritant. No sooner, however, has the quinine been eliminated from the system than the coryza again develops, and I have repeatedly seen an attack which ordinarily would have run its course in from four to five days been prolonged to two weeks on account of repeated doses of this medicine.

Leaving out quinine, the drugs most frequently administered in coryza are the various forms and combinations of opium, belladonna and aconite. While each of these modifies in some manner the normal development of a coryza, I believe them to have but little value in this connection and that they are actually injurious in a majority of cases.

My personal experience and observation have convinced me that there are but few constitutional remedies of any value in this condition. A certain number of cases of recurrent coryza are due to a uric-acid diathesis and in these the free administration of lithia is indicated and is sometimes very effective; the liberal use of uniced water being also very beneficial. A brisk saline purgative, if taken within the first twenty-four hours, is one of the most useful remedies and one which may be administered in almost all cases without injury.

As regards the local treatment, here again we have an example of the abuse of drug administration. In recent years there has appeared a greater tendency for proscribing cocaine, either alone or combined with other drugs, in the treatment of coryza. I have already, on several occasions, sounded the danger signal against the promiscuous use of this drug and again take this opportunity to warn against its abuse. When cocaine is applied to the congested nasal mucosa it produces a temporary contraction of the blood-vessels, so that the patient appears to be more comfortable for a time. This is, however, soon followed by a relaxation which occurs in from twenty minutes to one hour after the application, and, unless cocaine is again used, the patient is more uncomfortable than he was before. If, however, it is again applied the reaction is more severe and a chronic dilatation of the vascular tissues of the nostrils results, eventually terminating in an intumescence or a hypertrophy of the nasal mucous membrane which is responsible for many of the catarrhal affections which are so common.

Not only has cocaine an injurious local effect, but the literature on the subject shows that a considerable number of cocaine habitués owe their misfortune to its use in affections of the nose and throat and, in a large majority of instances, by the advice of a physician. Cocaine should rarely be used in this condition and never prescribed. It can effect but little good and has enormous possibilities for evil. The simplest and at the same time the most beneficial treatment consists in bathing the nostrils with a warm

one-half per cent. salt solution. This normal physiologic solution soothes the mucous membrane and washes it free of acrid or tenacious secretions and is absolutely uninjurious to the mucous membrane when properly applied. After its use by means of some form of douche, the atomizer not being so efficient, the patient should not blow the nostrils for ten or twenty minutes, so as to avoid forcing any of the solution into the Eustachian tube. The solution should be used gently and with only sufficient pressure to allow it to pass through the throat and the other nostril. Where ordinary precautions have been used, I have never seen a case where an irritation of the ear has been produced by its use. While this treatment is simply palliative it has the advantage of being free of any ill effects, which cannot be said of other methods of treatment.

The admitted difficulty in the treatment of this very common affection emphasizes all the more the importance of prophylaxis. It also demonstrates that in the treatment of local affections we should not forget the importance of general conditions. When the skin and vascular and nervous systems have been stimulated and strengthened in the manner already described, and the upper respiratory passages have been placed in their normal condition, coryzas are of rare occurrence and, if from some unusual cause they do develop, they are easily controlled.

TREATMENT OF RHEUMATISM AND SOME PHASES OF INDIGESTION; GOUTY DIATHESIS.

By CHARLES E. PAGE, M.D.,
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DOUBTLESS it would be a great loss, finally, to scientific medicine to abolish everything savoring of empiricism in medical treatment, whether in or out of the regular profession. It is very generally conceded that the treatment of many disorders is still largely, if not mainly, empirical, and this applies, perhaps, as much to the treatment of rheumatism and gout as to almost any other disease. The late Lawson Tait remarked that the only way an operation could be estimated justly was to ascertain its remote results. "It would matter very little if an operation had no primary mortality at all if it left the majority of its subjects maimed, halt, or insane at the end of two years." The same principle applies to the medical treatment of any disease; the frequent happy effects of the salicylates in banishing pain in rheumatism or gout are well known; but we have to face an occasional fatal result, and it is doubtful if the free use of such medicaments is ever unattended with subsequent ill effects, whether or not the patients or medical attendants are able to trace them to their true cause.

In my practice I have almost wholly discarded the salicylates in rheumatism and gout of late years, and have depended very largely upon hydrotherapy and strict regulation of the diet and general regimen, and have had much better results. From time to time, however, in obstinate cases I have tried one or another of the newer remedies, but as a rule without satisfactory results. Frequently during the past year a friend of mine, a physician of broad experience and a very careful man, has urged upon me his successes with piperazin water, a combination of phenocoll and piperazin, which has given him great satisfaction. Within a few months I have had, along with numerous mild cases, two very ugly cases of rheumatism in which I employed piperazin water and with rather surprisingly good effect.

Case I.—Miss P. G., aged sixty-six years, was for the past ten years unable to move about the house or even rise from or sit down in her chair without the aid of two crutches. Most of the time during these years every movement has been attended with severe and at times excruciating pain in the back, hips, knees and ankles. Her height is five feet and she weighed 223 pounds. Two years ago she had pneumonia and was "very sick a long time." In addition to most of the uncomfortable symptoms of obese subjects, so well known to all practitioners, she was utterly unable to retain her urine. "It runs from me regardless of all efforts to arrest it," she said. In spite of all her troubles her appetite was good and bowels "regular," as she claimed, but in fact she had two or three movements a day. She had tried to curb her appetite and had made some effort to exercise to keep her weight down; but several weeks before consulting me the exercise had caused extreme pain and "flowing," which confined her to bed for a week, when she "was again crawling round on two crutches." Urinalysis showed relation of urea to uric acid to be about 50 to 1. The urine was dribbling constantly, although the total quantity excreted was much below the normal. I put her at once on a very much restricted diet, moderate amount of whole-meal bread and fruit, and had her take one bottle of piperazin water daily, and all the fresh, cold water she cared for, all fluids to be taken on empty stomach. I allowed her two meals a day, breakfast between seven and eight and dinner at night. The first marked improvement was shown in increased flow of urine, and with some degree of capacity for retaining it. Within one week there was no further involuntary discharge of urine, and the pain was less constant and less severe. The relation between urea and uric acid steadily approached the normal, and on the fourth week it was practically normal, the amount of uric acid having increased, a change which must have been due to the drug, since the simple diet could not tend to increase the formation of this product; quite the contrary, in my judgment. I had proscribed the wearing of corsets and directed her to sit very little, but to lie down in nightgown and wrapper

for rest during the day; and I encouraged her to move about moderately and to gradually work up in the amount and vigor of her exercises. It has been my practice of late to discourage sitting in all these chronic cases, having patients rest from the fatigue of moderate exercise by lying down, and to rest from lying down by rising and moving about.

In this case the patient steadily lost weight and as steadily increased in strength. At the end of six months she weighed 160 pounds, having reduced about 63 pounds. She was now practically free from pain; she could rise from her chair with but slight aid from her crutches, and she could move about quite easily. Her bowels moved naturally five or six times a week, and urine was passed naturally four or five times a day. No other medicament but the piperazin water has been used, and of this she has taken the one bottle a day, and is at the present time steadily improving, losing about 2 pounds every week, and gaining in muscular strength and suppleness. Her heart, which was unmistakably fatty and weak, has shared in this increased strength; her complexion has become clear, her eyes bright, and her hearing, which was very deficient, has also improved somewhat. She is now able to do all of her own work about the house, and has actually "cleaned house" within the past week without assistance. She still keeps her crutches by her, and uses them when she goes out-of-doors. I have not encouraged her to abandon their use, believing that they are useful in the way of giving her needed "fore-quarter exercise," as well as in relieving the legs from the still excessive weight while they are gradually gaining in strength.

I am not alone in the belief that rheumatism is "a phase of dyspepsia," to quote the words of Dr. Casey Wood, who first gave me this thought; and from the steady improvement in digestion and assimilation in the above case, and the speedy relief from the pain, I am compelled to believe that the piperazin water has acted as a powerful disinfectant or preventive of the autotoxemia formerly constantly occurring from the absorption of ptomains from the gastrointestinal tract.

With this case in view I have employed the water in several cases of chronic dyspepsia within the past few weeks, and with marked improvement in each instance. In one case of chronic dyspepsia and constipation, in which the patient, male, sixty years of age, with insomnia and a victim of melancholia bordering closely upon insanity, the employment of piperazin water, with little modification of diet, beyond prohibiting the patient from taking a morsel of food except when he was sharply hungry—that is, he was to skip any regular meal and to wait until the next meal-time, whenever his appetite was the least "finicky"—produced results little short of miraculous; the patient, an emaciated dyspeptic, accustomed to force or tempt his appetite, in the idea that much eating would help put on flesh, regardless of indigestion and malassimilation, shortly had a reliable appetite for every meal; his bowels became quite regular, and he would sleep five or six hours soundly every night; his courage and spirits returned and his illusions were banished. I am confident that this was a case of chronic ptomain-poisoning from putrescent food-substances in the intestines, the product of indigestion. This patient is at present gaining in weight, sleeps well, and is improving steadily in strength, from the exercises prescribed and improved digestion. In none of the cases in which I have employed the piperazin water has there been any disturbance of any sort which I could attribute to its use; on the contrary, it has seemed to agree perfectly.

Case II.—Mr. P. C., broker, aged forty-five years, naturally rather a robust man. Within the past ten years he has had two very severe attacks of inflammatory rheumatism. He is a heavy feeder, eats freely of animal food and is a moderate drinker. He has habitually a great deal of trouble with his feet and ankles; wears a gout-boot most of the time, and is unmistakably of the gouty diathesis. He consulted me on April 21, 1900. He was confined to the house with severe pain in hips, knees, ankles and feet. Temperature 102.5° F. No appetite; had had no movement of the bowels for weeks without active purgatives. I directed complete rest in bed, and abstinence from food till indicated by hunger. Prescribed piperazin water, one bottle a day, and he was to take fresh water as freely as he could without inconvenience. The inflamed joints were kept cold-packed—thickly-folded linen towels wrung tightly from ice-water (extra towels kept on ice ready to change as often as the ones in use became at all hot) wound around the joints and well covered. A modicum of the piperazin water was poured over the damp packs. The relief from pain was quite marked, the local inflammation was shortly modified very satisfactorily about all the affected joints. The elbows and wrists had their turn at the process during the three weeks of illness, but in comparatively mild form. The temperature shortly came down to 100° F., and remained about at that point, no effort being made to lower the temperature with medicinal antipyretics. He held to the water-diet without claiming the least inconvenience for the first four days, the tongue gradually cleaning, pain moderate, and he got several hours sleep every day. On the fifth day he thought he could relish a piece of stale graham bread. He did eat a small slice with keen relish and also a couple of oranges later in the day. From that time on he had two moderate meals of fruit and bread, and on May 14th made a visit to his office. He continued the piperazin water in half-bottle portions daily for the next three weeks, and is at present in excellent condition. Compared with his former experiences he called this a very comfortable sickness, although he declares that it started in quite as ugly fashion as either of his former attacks.

For many years past I have regarded it as altogether unphysiological, and in every way bad practice, to feed any fever patient during the progress of the disease. This was the rule with Hippocrates, and in many hundreds of cases I have held to it with satisfaction. "Eating, like every other natural function," says Oswald, "should be a pleasure and not a penance." It is no penance for these patients to abstain from solid food in face of lack of appetite; it is rather a pleasure to be saved from the prevailing practice of forced-feeding. When hunger returns there is pleasure in eating and a promise of digestion and assimilation. The food does good, not harm.

The belief seems to be gaining ground among thoughtful physicians everywhere that autotoxemia is a factor in the causation and continuation of most, if not all, diseases. Numerous cases come to autopsy in which no visible cause for a much-disturbed mental state can be discovered, notwithstanding the most approved technic has been applied. "The investigation at the present time of the toxins formed in the gastrointestinal tract and the rôle autoinfection plays in the production of disturbed mental states," says Dr. S. C. Fuller in a recent essay, "has already thrown a flood of light on the etiology of epilepsy, some forms of melancholia, mania, and other nervous conditions not essentially mental." It does not follow, of course, that all intoxications necessarily proceed from the gastrointestinal tract, nor that autointoxication is the sole cause of all mental and physical infirmities; but in view of the prevailing living-habits of human beings, distinctively artificial and unwholesome as we know them to be, notably in case of sedentary persons who indulge freely in animal food two or three times a day, is it not altogether rational to assume that we have to reckon with malnutrition in considering the etiology and treatment of most diseases, whether chronic or acute? Dr. McCaskey recently suggested that "rheumatoid arthritis is a toxemia from the gastrointestinal tract." I can imagine no more natural or prolific source of uric-acid formation than the constant presence in the alimentary tract of putrescent food-substances from bad and overeating; and I attribute my unusual success in the treatment of both acute and chronic rheumatism to the active solvent properties of the piperazin water employed and to the rigid diet imposed.

Remarking that "the vegetarian and fruitarian are not urid-acid subjects, except under certain abnormal conditions when they may become meat eaters by subsisting upon their own tissues," Dr. H. A. Rundlett says: "There is, and that is within the knowledge and experience of all medical men, no single person who eats meat constantly that does not exhibit in some form symptoms due to insufficient excretion of uric acid or uric-acid poisoning, for that is what they indicate. Dull headaches, subacute muscular pains, tender fibrous tissues everywhere, reluctant and painful joints, heavy and unrefreshing sleep, mental hebetude, irregular and weak heart, inflammations of the mucous membranes or affections of the throat and nose, Riggs' disease of the gums, nervous irritability, and the rest of the tale, all appear in persons sound organically and wholly without any apparent reason for their complainings. These subjects will be found almost invariably to be hearty consumers of meat twice or thrice daily. Their urine carefully examined will show a higher percentage of urea as compared with uric acid, and the ordinary proportion of 35 to 1 may be found to be 50 to 1 or as low as 80 to 1."

The chief problem, then, in all these cases is to diminish the formation and increase the elimination of uric acid; and hence the value of a potent and at the same time non-toxic solvent of uric acid such as the piperazin water has proved to be in the cases cited.

MEDICAL PROGRESS.

Silver Wire in Surgery.—A. M. Phelps (*Med. Rec.*, September 22, 1900) states that in addition to using silver wire for suturing the tissues in hernia operations, we may use it in large cranial wounds with much loss of bony structure, also in restoration of ruptured and lacerated muscles; the opening in the skull is closed by stitching across it fine silver wire, including the aponeurosis and periosteum on the other side of the wound; the stitching in the second row is at right angles to the first across the wound; this forms a network which prevents the cicatricial tissue from contracting and making pressure upon the brain; it also prevents hernia cerebri. In rupture of muscles or in loss of muscular tissue from injury, the muscles may be stitched together with a continued suture and when there is loss of muscular substance the wire should be stretched across from end to end of the muscle, care being taken that the wire be in the center of the muscle with no ends projecting when reproduction has taken place; such muscles are as strong after reproduction as before the injury and the scar tissue between the ends of the ruptured muscles, for instance, the quadriceps extensor femoris or the biceps flexor cubiti will not stretch because the encysted wire will prevent it. The presence of the silver wire will never occasion disturbance and suppuration is not produced by the wire unless the germs of infection are introduced with it.

Membranous Enteritis.—Membranous enteritis is a rare disease, characterized by irregular paroxysms of abdominal pain, tenderness, tenesmus, and the passage of shreds, tubes and membranes of mucus, occasionally forming exact casts of the bowel. Up to 1888 only 116 cases had been reported, of which only 8 were fatal. H. L. Slifer (*N. Y. Med. Jour.*, September 22, 1900) adds three cases which are characteristic of the con-

dition. It is most common between the ages of thirty and forty and about eighty per cent. are among women, especially those of a neurotic type. The characteristic symptoms are derangements of the digestive organs varying much in degree, with vomiting and diarrhea or obstinate constipation. Intestinal colic usually precedes the evacuations and disappears after purgation. It may be localized in the left side along the course of the colon. Palpation is painful. The membrane is thin, smooth, and soft, of a yellow color. It presents the appearance of a structureless, transparent jelly-like membrane similar to the white of an egg. Chemically it consists of mucin and an albuminous substance. Microscopically, the exudate is made up of opaque white matter, in which are imbedded epithelial cells, crystals, bacteria and particles of food. Da Costa believes it to be due to "the nerves presiding over nutrition and secretion." W. H. Thomson thinks that direct mechanical irritation of the rectum, as horseback or bicycle riding, or pressure from uterine fibroids upon the rectum, or habitual constipation, gives rise to it. The treatment must be directed to the relief of pain and removal of the membrane, and also to the removal of the cause. Opiates may be necessary during the acute stage. High enemata of water or oil usually give relief. The author believes that a course of iron, arsenic and strychnine is beneficial. Small and frequent doses of castor oil are soothing and effectual in preventing constipation.

Diagnosis of Typhoid.—Though typhoid fever is a disease manifesting itself by various typical symptoms, one must be prepared to meet cases in which one or more of these are absent. Thus A. Berliner and M. Cohn (*Münch. med. Woch.*, September 11, 1900) have found among 45 cases a palpable splenic tumor absent in 6, the roseola in 7. Perfectly normal stools were present in an equal number of cases and constipation occurred in 11. The diazo-reaction has been found to be fairly constant, except in such cases admitted after the third week. In the earlier days of observation many cases other than typhoid had been reported with a positive Widal reaction, but with increased skill and greater care in proper dilution such instances have become less frequent. The authors prefer a dilution of 1 to 30 made with a twelve-hour culture. Attention is drawn to the fact that with older cultures the dead bacilli may cause a precipitation which may be erroneously looked upon as agglutination. Of the total number only one single case has been noted with a negative reaction and the observation that a complicating pneumonia may interfere with a positive result could not be corroborated, although in several cases a mixed infection was present. From a prognostic point of view the Widal test is of less value than from the diagnostic, since in the fatal cases it had persisted until the end. The complications observed were inflammations of the air-passages, hemorrhages from the intestines and kidney, nephritis, superficial abscesses, and in one case, marked by persisting somnolency, an extensive meningeal edema.

Demonstration of the Capsule of Bacteria.—It has been hitherto impossible by the usual methods to prove the presence of a surrounding envelope in those bacteria which are known to possess one, when instead of directly examining the specimen one first prepares a gelatin or agar culture. Icilio Boni (*Münch. med. Woch.*, September 11, 1900) finds that by diluting a loopful of culture with a solution composed of albumin, glycerin and formalin, on a glass slide, then spreading to a very thin film, carefully drying by passing through a flame until no more white fumes are given off and, finally, staining with undiluted Ziehl's solution for one-half minute, a capsule can usually be demonstrated. As a suggestion the author states that this method may be available to prove the presence of a capsule in many other bacteria and thus may be an aid in differential diagnosis as, for instance, between the typhoid and colon bacillus.

Decolorizing Properties of Living Cells.—M. Neisser and F. Wechsberg (*Münch. med. Woch.*, September 11, 1900) have found that the behavior of leucocytes to the aniline dyes is a direct index of their vitality, for if to a fresh exudate there is added a dilute solution of methylene blue, a decolorization takes place which is not seen if the cells are first killed by the addition of quinine or other leucocidal substances. The same has been found to be the case with spermatozoa, ciliated epithelium, bacteria and cells not possessed of motility. This simple procedure will prove of great value in estimating the bactericidal powers of specific blood sera and the bacterial contamination of milk and other food stuffs.

Cinnamic Acid in Tuberculosis.—C. Kraemer (*Therap. Monatshft.*, September, 1900) reviews 186 published cases of tuberculosis treated by intravenous or subcutaneous injections of sodium cinnamate and pronounces a favorable verdict as to its action. All authors are unanimous in considering the drug harmless, although mention is made here and there of slight nervous and vasomotor disturbances and of hemoptyses directly traceable to the injections. The action of cinnamic acid is explained by three factors: (1) An increase of leucocytes in the blood; (2) a walling-in of the tubercles by these leucocytes, and (3) a fibrous transformation or encapsulation. The leucocytosis will increase the alkalinity of the blood and this will permit the peripherally-situated parts of the tubercle to enter into solution, following which the tubercle manifests an increased chemotactic action with resulting zone of round cells which, owing to the increased vascularity, readily undergoes the fibrosis which constitutes the final and most effective step in the cure. Of all the methods of administration, the intravenous is best, since here the leucocytosis is

most marked and the digestion is least liable to suffer.

Citrophen.—Among the many remedies which flood the market, citrophen, according to F. Kornfeld (*Therap. Monatshft.*, September, 1900), deserves more than passing notice. Marked advantages are ready solubility in carbonated waters, a pleasant acidulous taste, and absence of after-effects even in cases of cardiac insufficiency or degeneration of the heart muscles. Not only does it reduce temperature in fevers, but in rheumatic affections and in the various neuroses it often acts as a specific, and in pertussis and chronic morphine-poisoning it is without peer. It has also been recently recommended in influenza and the author can heartily endorse its usefulness.

A New Hernia Operation.—A. M. Phelps (*Med. Rec.*, September 22, 1900) describes a method of his own invention which he believes to be novel, certain, and lasting in its results, being fraught with no dangers and giving in his experience of over 216 cases (46 of which were relapsed Bassini operations, and 51 of which were relapsed McBurney and other operations) perfect results in the radical cure of hernia. Acting on the well-known clinical fact that scar tissue will stretch, whether the wound unites by primary union or not, thus giving a recurrence of hernia after hernia operations, Phelps introduces a continued suture of fine silver wire which becomes encysted and remains so during life, causing no disturbance whatsoever. As retraction of the peritoneum and transversalis fascia is apt to take place after ligation of the sac, he obviates this accident by cutting off the sac, retracting it precisely as in any other abdominal operation, and by stitching up the peritoneum and transversalis fascia with a continued suture of silver wire; over the transversalis fascia and peritoneum a mattress of fine silver wire is placed and the deep layer of muscles stitched over it with continued suture of silver wire. A small glass drainage-tube is inserted down to the wire mattress for the purpose of drainage; if a large hernial opening is to be stopped and there is much attenuation of the muscular coats of the abdominal walls, a second mattress of wire is placed between the layers of muscles and a superficial layer of muscles, together with the aponeurosis stitched over it; the cord is brought out from the inguinal canal externally and inferior to the internal abdominal ring; a notch made by cutting with scissors in the aponeurosis of the muscles prevents strangulation, and the cord lies directly under the skin in its course to the scrotum. The use of catgut, silkwormgut, kangaroo-tendon or silk suture would defeat the very object aimed at, as they are all absorbable, except the latter, which is so liable to cause infection; the silver wire must be taken from a solution of pure carbolic acid and then heated to a red heat in an alcohol-lamp flame, before being introduced into the wound, so as to render it sterile. Should infection take place in the mattress of wire, lay the wound open with a fine curette, scrape out all of the infected portion, and fill the wound with pure carbolic acid; immediately afterward wash it out with alcohol, which is a perfect antidote to the corrosive effects of carbolic acid, and allow the wound to heal by granulation; in the cases so treated not a single one has relapsed.

"Rheumatic and Gouty Diatheses."—For many years it was generally understood that rheumatism was due to the deficient oxidation of carbohydrates and the accumulation of lactic acid in the blood, while gout resulted from incomplete oxidation of proteid material and the presence of uric acid in the tissues. These theories have now, however, been proven improbable by extended investigations, so that the most plausible explanation offered to account for these conditions, and the one which is commonly accepted, is that both maladies result from a suboxidation of proteid food, the pathological and clinical differences being due to the varying influences which digestive disturbances and systemic metabolism have upon the imperfect oxidation of proteid elements. W. H. Porter (*Med. Rec.*, September 22, 1900) believes that the chief cause for such a suboxidation state is the ingestion of more oxidizable food than can be completely reduced to the end-products, but a diminution in food supply, especially when of a poor quality, may so deteriorate the nutritive activity of the system that even the small amount of food taken cannot be properly transformed. Sugars, fats and starches are easily and quickly oxidized, so that large quantities of such food may overtax the oxygenating power of the system, and thus prove to be potent factors in causing the imperfect oxidation of the more difficultly transformed proteid materials. Thus may be explained the peculiar phenomenon that rheumatism is more likely to occur than gout when a carbohydrate diet is used, for it is easy to understand that a suboxidation due to this cause might reasonably be of a different nature than that due to an inordinate quantity of proteid food. Uric acid, although an end-product, is a substance less completely oxidized than urea and hence appears in the urine in larger quantities when the systemic powers of oxidation are deficient. It probably never exists in the blood, is normally formed by the renal cells, but under pathological conditions can be made at abnormal points by the vicarious actions of protoplasmic masses. The author believes that the varying degrees and kinds of suboxidation met with, such as the so-called gouty and rheumatic states, are the result of some special micro-organism acting in the alimentary canal, or may be the result of two or more varieties acting together, or may perhaps be due to the absence of certain kinds of bacterial life which are essential to the normal digestive processes. The two great predisposing factors, then, are the ingestion of too large quantities of nutritive pabulum for perfect oxidation and the ac-

tion of the bacteria on the proteids in the alimentary tract resulting in the formation of toxic materials which are absorbed with the food products. In regard to rheumatic and gouty affections having a direct relation to traumatic and gonorrheal joint-lesions, it is probable that the tendency toward suboxidation already exists in the system and these added pathological changes in the joints merely determine the site for the deficient metabolic processes to manifest themselves. Furthermore it is urged that when we come to cases of acute articular rheumatism we reach a point in which the errors in diet, the action of bacteria in the alimentary canal and the absorption of the toxic products act when they are introduced into the system as the direct etiological factors in determining the special type of suboxidation.

Tuberculous Peritonitis.—A. Kennedy and E. Steele (*Lancet*, August 25, 1900) narrate the history of a boy four and one-half years old, with a family history of tuberculosis, who two weeks prior to admission to the hospital had diarrhea, pain in abdomen, aching in the legs, and loss of flesh and strength; examination revealed an abdomen distended, with stomach-walls tense, yet neither rigid nor tender, with a few ill-defined lumpy swellings about umbilicus, appreciable on palpation. As the symptoms were daily increasing in severity a laparotomy was performed, the intestines being found matted together. The condition of the boy under an anesthesia was so bad that the abdomen was closed forthwith. After a few weeks the boy's general condition had greatly improved; two months later he was discharged from the hospital, cured. The value of a simple laparotomy in tuberculous peritonitis is now acknowledged, the explanation usually given is that opening of the abdominal cavity disturbs the previously existing conditions of exudation and absorption so that the tubercle bacilli are no longer capable of living; although this explanation is not satisfactory, the evidence we possess in regard to the advantages of laparotomy is sufficient to justify the performance of the operation. Drainage seems to be unnecessary and undoubtedly it adds largely to the risk of the operation; flushing with normal salt solution has appeared to be useful, but not essential; the mere making of a small opening into the abdominal cavity, as in the performance of a radical cure of hernia, is not sufficient to have any beneficial effect on the tubercle bacilli.

The Influence of Oophorectomy in Osteomalacia.—E. O. Croft (*Lancet*, August 25, 1900) records the case of a married woman, aged thirty-five, whose previous history as to family, menstruation and other functions was perfectly normal until the sixth month of her first and only pregnancy (which occurred in her thirty-third year), when she began to complain of pain in her back and thighs and difficulty in locomotion; these symptoms continued until the birth of her child, accomplished by instrumental delivery; one week after this event there was a sudden permanent cessation of milk in the breasts. After labor her pains were still present, although walking was more easily accomplished. One year later the pain had extended until it involved the spinal column, ribs, sacrum and pelvis, but the long bones were not involved; all of these symptoms continued unabated until a few months ago, when, because of an absolute inability to walk and the presence of intense pain, she sought hospital treatment. On admission there her abdomen was found to be prominent and pendulous; the symphysis pubis was prominent and the bony outlet of the pelvis markedly contracted; her urine contained no albumin or casts but about twenty-nine grains of phosphoric acid in the forty ounces of urine passed daily. Acting on the theory of Curato and Tarulli, that the internal secretions of the ovaries have the power of oxidizing compounds of phosphorus, such as those which exist in long bones, and that the removal of the ovaries would check the amount of oxidation taking place, thereby increasing the deposit of calcium and magnesium phosphate in the bones, a double oophorectomy was performed on the patient, who made an uninterrupted recovery surgically. Four weeks after operation a marked improvement of the symptoms previously existing was noticed; the pains and stiffness in the back were less annoying and the patient was able to get about with less difficulty, although standing unsupported was both difficult and painful. Too short a time has elapsed since operation to give any more extended observations as to the patient's improvement other than to note a diminution of twenty grains in the amount of phosphoric acid contained in the urine. The internal administration of phosphorus and bone-marrow is said to produce great improvement in cases of osteomalacia.

Urethritis.—Many specifics for this disease have been placed on the market. Of late years the preparations containing silver and mercury have enjoyed a deserved popularity. R. Guiteras (*Lancet*, September 22, 1900) reports on the use of a new one, Mercurol. This is a combination of nucleinic acid and mercury. The nucleinic acid being derived from the albumin compounds of yeast. Its special claims are its lack of irritable properties and its solubility. In the treatment of 150 cases, beginning with one-quarter of one per cent. solutions, gradually increasing to 5 per cent., he has secured results which he believes are better than those obtained by the older methods of balsamic and astringent medication. The stronger solutions were later modified, the final results showed that a two per cent. solution was most efficient. In 100 patients treated with this strength solution, 22 were practically cured in three weeks; 28 in four weeks; 17 cases extended over four weeks; 18 patients ceased to come after two visits and 15 were under treatment. Two patients suffered from complications, Solutions are preferably used fresh. The injections are to be made slowly.

THERAPEUTIC HINTS.

Bromipin in Epilepsy.—*M. Kothe* keeps his patients in bed for several weeks, giving a tepid bath of short duration twice a week. At the same time he gives bromipin, 5 grams (75 grains), t. i. d., by mouth, or 15 grams (225 grains) at bedtime by rectum. In the course of six or seven weeks the dose is increased up to 40 grams (600 grains) a day, is maintained at this for three weeks, then gradually reduced for six or seven weeks.—*Bull. de Méd. de Paris*, Apr., 1900.

Scabies.—At the 1900 meeting of the American Dermatological Association, *S. Sherwell* recommended that, after thorough bathing, the body and limbs be rubbed lightly with washed sulphur, less than half a teaspoonful for each person; this to be followed by clean underclothes and clean sheets with half a dram of sulphur dusted between them. If this is repeated every second or third day the cure, in ordinary cases, is complete in a week. In a large experience the author has seen no resultant dermatitis or failure of cure. The method is clean and free from grease or unpleasant odor, so may be used in logging-camps, ships, etc. T. C. Gilchrist allays the itch by rubbing in balsam of Peru with a soft toothbrush. J. C. White obtains prompt alleviation of the itch and frequently cure in three days by balsam of Peru with or without sulphur or naphtalin. C. W. Allen thinks the balsam too painful to apply to the scratched skin of a child. Geo. T. Elliot has tried styrax and sulphur, but finds the dermatitis produced by the latter to be worse than the itch.

Fetid Rhinitis.—To keep the parts clean and disinfected, Geo. M. Lefferts advises the daily use of the anterior or posterior nasal syringe, the occasional removal, if necessary, of hard crusts by forceps, and washing with an alkaline and antiseptic solution until all offending secretions are removed. Suitable formulæ for this purpose are:

℞	Sodii borat.....	4.0	(3i)
	Glycerit. acidi carbol.....	6.0	(3iss)
	Aquæ	500.0	(Oi)
or			
℞	Ac. salicylici.....	0.6	(gr. x)
	Sodii bicarb.....	4.0	(3i)
	Aquæ	500.	(Oi)
or			
℞	Sodii borat.....	4.0	(3i)
	One per cent. solut. potass. permangan.....	6.0	(3iss)
	Aquæ	500.0	(Oi)

The uncomfortable dryness of the mucous membrane may be in part overcome by the frequent use by the patient of a spray of liquid vaseline.

Acute Gonorrheal Vulvitis.—George M. Tuttle's treatment is rest in bed, light diet, keeping bowels open and urine bland by salines, especially potassium salts, and bathing every three or four hours, using plenty of water rather than antiseptics. Weak carbolic, bichloride, lysol, or boric-acid washes may, however, be of use. After the douche, paint the parts with a two-per-cent. solution of silver nitrate increased rapidly to 10 per cent., and keep the parts separated with gauze wet with lead-and-opium wash to relieve the pain, or weak bichloride, or

℞	Ammon. chlorid.....	4.0	(3i)
	Alcohol	4.0	(3i)
	Witch hazel.....	500.0	(Oi)

If an ointment is preferred use iodoform, 2 to 4 per cent., or bismuth subnitrate and glycerin.

Lobar Pneumonia.—In the cases with no special indication for treatment, says *Francis Delafield*, the patient gets well with rest in bed, careful nursing, and the inhalation of oxygen. Headache, pain, restlessness, and sleeplessness may be relieved by tincture of aconite, 2 drops every hour or two, acetanilid in 3-grain (0.18) doses, deodorized tincture of opium, or the bromides. Large poultices, or

℞	Morph. sulph..	0.003	(gr. 1/20)
	Caffeinæ citrat.	0.06 to 0.25	(gr. i-iv)
	Acetanilid	0.18 to 0.3	(gr. iij-v)

every 3 or 4 hours, do much to promote comfort. If bronchitis is excessive, dry cup the chest, and to diminish the mucus and serum and stimulate the heart give

℞	Fl. ext. digital.....0.06		(♏ i)
	Fl. ext. convallar.....		
	Tr. nucis vom.....aa.	0.3 to 0.6	(♏ v-x)
	Syr. pruni virg.....		
	Aq.. .....aa.	4.0	(3 i)

For the heart's action alone, use whiskey, caffeine, strophanthus, or

℞	Potass. iodid.....0.3		(gr. v)
	Fl. ext. digital.....0.06		(♏ i)
	Fl. ext. convallar.....1.2		(♏ xx)

When there is unusually rapid breathing and rapid heart without much consolidation, give whiskey, 4.0 to 30.0 (3i-3i) e. 3 h. and

℞	Aconitine ...	1/6 mg.	(1/100 grains)
	Digitaline ...	1/8 mg.	(1/120 grains)

every half hour, watching patient closely. When the pulse is reduced to between 90 and 100 per minute, keep it there; if it does not respond in twenty-four hours, stop. In bad cases with rattle of mucus, frequent cupping, large doses of nux vomica, and nitroglycerin, .0012 (gr. 1/50), are indicated. In the few cases where tympanites becomes serious, irrigation of the colon with hot water may relieve. In the protracted cases, resolution may be promoted by having the patient sit up.

Cure of an Attack of Hiccoughing.—*Noir* reports an immediate cure by means of continuous traction on the tongue for one and a half minutes. The patient, a nervous child, had been hiccoughing almost uninterruptedly for six hours; she had failed to respond to the various remedies applied, and was greatly exhausted. There was no recurrence.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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MEDULLARY COCAINIZATION.

When one considers the many directions in which the field of surgery has recently been amplified and its scope extended to embrace formerly unthought-of regions of operative endeavor, while at the same time almost revolutionary innovations in technic have advanced the science in nearly every one of its ramifications, it seems strange that so little has been done to improve our methods of producing general anesthesia, and that the three agents in general use for this purpose to-day are still those employed by a former generation and have come down to us practically unchanged from the middle of the century. Nor is it surprising, when a new procedure is suggested and the possibility of its ultimate development into a measure available for every-day use becomes manifest, that the general interest should be excited to an unusual degree and enthusiastic advocates be found ready to laud its advantages with a somewhat premature fervency of expression.

It is interesting to note that the conception, development and exploitation of the idea of cocainization of the spinal cord have been due to men of three different nationalities, Corning of this city, Bier of Kiel and Tuffier of Paris. In 1885 the first of these, in a work entitled "Local Anesthesia" and in a number of subsequent shorter papers, suggested the possibility of extending the local action of cocaine to a larger area by injecting it into the tissues in the immediate vicinity of the spinal canal with the idea that, owing to the rich vascular supply of the region, the solution would rapidly reach the cord. Although his studies did not lead to any practical result and the method as described is impracticable, the credit of having been the first to conceive of such a possibility undoubtedly belongs to our countryman. Quincke's operation of lumbar puncture, devised purely as a diagnostic aid, should have given the hint, but, although Jacob (*Berlin. klin. Woch.*, 1898, No. 21-22) and Sicard (*Soc. de Biolog.*, 1898, April 30) injected small quantities of inorganic drugs and v. Leyden (*Berlin. klin. Woch.*, 1899, p. 632) administered tetanus serum by this route, it remained for the genius of Bier (*Deutsche Zeitschr. f. Chirurg.*, Vol. LI., p. 361) to combine the observations of his predecessors and bring the method to a practical working basis as we have it to-day. Notwithstanding the interest of Bier's article and the favorable editorial comment it received in this (Medical News, July 1, 1899) and other journals as well as in a communication by Seldowitsch (*Centralblatt. f. Chirurg.*, 1899, No. 41), giving reports of successful cases, his work did not receive a great measure of consideration and it was Tuffier (*Semaine médicale*, 1900, No. 21) who, at the Paris Medical Congress, with the theatrical instincts of his race, exhibited and exploited the method with a dash and *aplomb* that compelled attention and in the eyes of the many crowned him with factitious laurels as its deviser. Since then many operators have published gratifying results, Kreis (*Centralblatt f. Gynäk.*, 1900, No. 28), Severeneau, Racoviceanu, Pitesia, and Nicolette (*Semaine médicale*, 1900, No. 33), and, in this country, S. Marx (Medical News, August 25, 1900, and *Med. Record*, October 6, 1900), J. B. Murphy (*Jour. Amer. Med. Assoc.*, September 1, 1900, and *Chicago Clinic*, September, 1900), J. Riddle Goffe (see p. 559 of this issue), W. W. Keen, F. Kammerer, and others.

The anesthesia produced begins from five to fifteen minutes after the injection and continues for a period of from one to four hours. There is complete loss of pain sense over an area varying somewhat in different individuals independently of the dose employed, but usually extending as far up as the nipple line. There is but little loss

of motor control and the operative manipulations are felt as somewhat unusual sensations, but operations of the greatest severity, laparotomies, amputations, osteoplastic resections, etc., may and have been performed without causing discomfort other than that due to apprehension and nervousness.

At the first blush it might seem that the *ultima thule* of elegant operating had nearly been reached and that a Utopian era was to dawn for the surgeon; the services of the anesthetizing assistant to be dispensed with, the not inconsiderable items of ether and chloroform dropped from the monthly bills of hospitals, cardiac and nephritic cases no longer to be approached with uneasiness, no more inhalation or aspiration pneumonias, and, finally, the pleasure and comfort of operating on a patient cognizant of the operator's wishes and able by voluntary assistance to facilitate many otherwise difficult maneuvers. Indeed, a vivid imagination might conceive of the analogues of the engravings of the old Vesalian and Albinian anatomies, in which delicate ladies daintily hold up the lace work of their own omenta for the inspection of the beholder, in the possible illustrations of the surgeries of the future which might portray the interested patient as assisting the surgeon by holding a retractor or clamping his own arteries.

It is unfortunately true, however, that notwithstanding its great promise for the future, in its present stage the operation does not justify any such rose-colored view, and in spite of the ardent claims of its promulgators we must admit that we are still as far from the *desideratum* of an absolutely safe, universally applicable, general anesthetic as ever. The immediate sequelæ of the operation, nausea, headache, vertigo and general prostration, are always more severe and of longer duration than those usually following chloroform or ether, and, though it seems that these are in most cases amenable to suitable medication, instances are recorded in which they persisted for as long as eight days, and others in which fever, chills and collapse were followed by death. It has not yet been determined whether these symptoms are due to derangements of the intracranial and intraspinal equilibrium following the escape of cerebrospinal fluid, or whether they are to be ascribed to the toxic effects of the drug itself. Lewandovsky (*Zeitschrift f. klin. Med.*, Vol. XL., No. 5-6, 1900), in an exhaustive article on the cerebrospinal fluid, has shown that substances thrown into the subarachnoidean space are directly brought into contact with the nervous elements of the cord through the lymph-spaces without the intervention of the circulation, and our knowledge of the physiology of the nerve-cell is yet too inadequate to justify us in believing that such potent alkaloids are to be directly applied to it with impunity. The comparative frequency with which individuals are encountered whose idiosyncrasy is such that even the ordinary subcutaneous use of cocaine is fraught with serious danger should make one hesitate before indiscriminately using it under conditions which immeasurably increase the risk. Then, again, the operation itself is not at all the harmless procedure it might seem. Gumprecht (*Deutsche med. Woch.*, June 14, 1900) has reported 15 cases of sudden death following lumbar puncture performed simply for diagnostic purposes, and the danger of infection and consequent meningitis is an ever-present and serious menace.

Taking these facts into consideration, however optimistically inclined we may be, we cannot but agree with Bier, who in a recent article (*Münch. med. Woch.*, September 4, 1900), written after over a year's experience with the method, deplores the tendency of over-hasty zealots to accept it as already perfected and ready for universal application, and particularly warns against the large doses that have been used; given a drug of good quality it is never necessary to exceed fifteen milligrams in amount. It should be our object not to continue its use in the already sufficiently exploited and evidently unsatisfactory way as first described, but rather, taking this as a starting-point, to elaborate further measures which shall not be open to the same objections. Means must be sought by which it shall be possible to make the lumbar injection of cocaine as harmless as when practised elsewhere, to abolish the after-effects, and to extend its action so that we shall be enabled to operate on the entire trunk and also the upper extremities. And, most important of all, the effort should be made to effect the anesthesia through the use of non-toxic agents, which has already been successfully done in the case of animals. The difficulties presented by these problems are great, but they are probably not insurmountable and we are justified in entertaining the hope that they will ultimately be overcome. For the present, however, we must be content to regard medullary narcosis not as an accepted fact, but as something still in its chrysalis stage.

MEDICAL ETHICS.

A very good discussion of the ethical relations of the physician to his patients and his fellow practitioners has just appeared in the *International Journal of Ethics,* for October, from the pen of Dr. E. Brudenell Carter of London.

From a fragmentary reading of it the New York *Sun* has assumed that medical ethics are painfully on the wane; and without even hinting at the interest of the article from its revelation of a physician's temptations and his self-denials, launches this bit of pessimism by quoting the following sentence without its context and without a word of explanatory comment: "The tendency in some quarters has been from the standards of a gentleman to the standards of a trades-union; from the standards of a man of honor to the standards of a man of business; from the standards of a philanthropist to the standards of a self-seeker."

The author gives just accounts of the various conditions of modern industrial and social life that encourage the dishonest physician and that tempt the poor and striving man into easier methods of gaining a livelihood. The patients of certain French physicians, as well as those of certain classes the world over, undoubtedly demand that their physician shall assist them to avoid the responsibilities of maternity; the ignorance and superstition of poor working people lead them to patronize by preference the cheap fakir who advertises his medicine and gives his advice free; the vanity of the rich snob who advertises his physician along with his own society notices; and the ambition for wealth and social recognition leads some physicians to push themselves at the risk of their dignity.

All these facts are as true as that human nature is frail, but that physicians are, as a class, degenerating into mere tradesmen, competing with one another in petty ways at the expense of their profession, is not true. There never was a day when an underhand or sordid spirit in a practising physician was more despised, nor were there ever so many honest, skilful, unselfish men, ready to give so much science to disease and comfort to pain for their fee.

The question of medical etiquette is not that of ethics and many of the questions that are discussed as ethics belong in reality to etiquette, which is but the prevailing custom of certain localities and has nothing to do with a physician's integrity and honor.

The code of medical ethics, such, for instance, as is framed by the Manchester Medico-Ethical Society, gives a fair idea of the high standard of propriety and honor in the profession. All self-seeking, all advertising, all secret sharing of profits, all dishonorable attempts to win another man's practice are deemed significant of untrustworthiness; and the expression of such lack of trust by his fellow physicians is considered sufficient disgrace to a right-minded man. If such lack of esteem does not affect a man as much as the lack of cash; and if he confines himself, as must be the case, to a class of patients who have no particular regard for trustworthiness in their physician, they and he may jog along together to their mutual satisfaction; but he does not represent the ethics of the average physician who in the great majority of cases gives more time and service and skill to his patients than is ever paid for, and who makes more sacrifices in a week without counting the cost, than would stock a business man in self-esteem for a year.

No, we admit that, although there are more ways than ever before for the medical profession to go into trade, as it were, we hold that the physician's sense of honor is as keen and his ethical standard as high as ever.

Dr. Carter concludes this article of which the *Sun* quotes the one unhopeful sentence with Robert Louis Stevenson's description of the English doctor. "There are men, and classes of men, that stand above the common herd, the soldier, the sailor, and the shepherd not infrequently, the artist rarely; rarer still the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only remembered to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practise an art, never to those who drive a trade; discretion, tested by a thousand embarrassments; and, what are more important, Heraclean cheerfulness and courage. So it is that he brings an air of cheer into the sick-room, and often enough, though not so often as he wishes, brings healing."

Yellow Fever Patient from Cuba.—E. Bertweer, a saloon passenger aboard the Ward liner *Havana,* which came in on Tuesday from Havana, is ill of yellow fever in Swinburne Island. He is the first yellow fever patient discovered this year in the saloon of any liner plying between New York and Cuba.

ECHOES AND NEWS.

NEW YORK.

Another Death from Jimson Weed.—This is the time of year when Datura Stramonium ripens and the thorn-apple seeds eaten. The daily press announces the death of a six-year-old boy who ate the interior of one thorn apple.

Dismissal of City Hospital Internes.—Two internes on the Blackwell's Island staff were dismissed last week for entertaining young women in their apartments after the lights were out. Superintendent Roberts thought that successors who would be more circumspect were desirable.

Dr. Stedman's Gift to Columbia.—Dr. Thomas L. Stedman of this city has presented to the library of Columbia University a collection of a hundred peculiar books. They include christomathies, collections of folk songs and phrase books in Russian and Modern Greek, several Chinese books, including a Chinese-Russian dictionary, lithographed from the author's manuscript, some old Arabic and Turkish grammars and a number of works on Volapük and other artificial languages.

New York State Medical Association.—This body, as already announced in the Medical News, will hold its annual meeting next week, October 15th, 16th, 17th and 18th, at the New York Academy of Medicine. A meeting of the Council will be held Monday, October 15th, followed by a meeting of the Council and Fellows. The regular general meetings will open Tuesday, October 16th, at 10 A. M. The feature of the first day will be a "Symposium on Obstetrics," in which Drs. E. P. Davis of Philadelphia, Austin Flint, Jr., Geo. W. Jarman, John E. Weeks and William R. Pryor will take part. In the evening at eight o'clock there will be a "Symposium on the Blood" in which Drs. E. K. Dunham, Leon T. LeWald, Alfred Stengel, C. Y. White, Joseph C. Bloodgood and H. C. Gordinier will take place. The President's Address will be read Wednesday and in the afternoon at two o'clock there will be a "Symposium on Tuberculosis." This will be opened with a general paper by Dr. Victor C. Vaughan of Ann Arbor and will be discussed by Drs. Jonathan Dwight, Charles Stedman Bull, Seymour Oppenheimer, John A. Fordyce, and Samuel Alexander of New York, Drs. Maurice H. Richardson and E. H. Nichols of Boston, and by Dr. John G. Clark of Philadelphia. The program in fact is especially attractive. The Trunk Line Association has granted a reduction on the certificate plan, of one and one-third fare to those coming to the city, which reduction applies to their friends and families.

Defence of the Free-Clinic System.—In the current issue of *Charities* is printed a letter from the Rev. David H. Greer, rector of St. Bartholomew Church, in defence of the free clinics which we believe to be most falsely founded. This letter was occasioned by a statement from Dr. S. A. Knopf that there is a serious abuse of the free-clinic system in New York City, fully one-half of the population receiving all medical treatment in this way. In his reply, Dr. Greer says in part: "The statement quoted by Dr. Knopf, and which has been time and again repeated, about one-half the people of New York receiving free medical treatment, is not based in my judgment upon exact statistical information. We are reported, for instance, as having treated over 25,000 cases last year at St. Bartholomew's. The fast is, however, we only treated about 6000, many of whom were treated three or four times; and even these 6000 were not all new cases, but came to the dispensary at intervals of several months, and yet every time they came they were counted, and counted, too, in every department of the dispensary in which they made application." Dr. Greer further maintains that the average wage-worker in the city cannot afford to pay for treatment by a reputable physician, as the charges are too exorbitant. Comment upon this last statement is superfluous. One sees in it one of the reasons of Stevenson's opinion of some of the clergy noted in our editorial columns. If Dr. Greer would take the trouble to really inform himself he can readily ascertain the fact that practically every statement in Dr. Knopf's letter to the *Times* is *true*.

Obituary.—Dr. William Webb Browning died Wednesday, October 3d, from a stroke of apoplexy, at his home at No. 155 Reid Avenue, Borough of Brooklyn. He was stricken while riding along the Eastern Parkway with his daughter in an automobile. Dr. Browning was born in Metuchen, N. J., in 1852. He was graduated from Yale in 1873, and in 1875 was graduated from the Columbia Law School. After practising law in this city for seven years, he entered the Bellevue Medical College, from which he graduated in 1884. In 1895 Yale College conferred upon him the honorary degree of A.M. Dr. Browning held two professorships in the Long Island College Hospital—the chair of anatomy and the chair of clinical orthopedics. He was a member of the Kings County Medical Society and the American Academy of Medicine. He leaves a widow and six children.—Dr Marie Upton Hanford died from cancer on October 6th at her home, 178 South Fifth Street, Brooklyn. She was the daughter of the late Gen. Emory Upton, United States Army, and was born in Batavia, N. Y., sixty-three years ago. She was married in 1871 to Dr. F. C. Hanford, who has been practising medicine in Brooklyn and New York for fifty-seven years. Mrs. Hanford was graduated from the New York Hospital for Women twenty years ago, and was well known through her charitable work among the dispensaries for the poor.

PHILADELPHIA.

Obituary.—Dr. Crawford Irwin, one of the most distinguished physicians of Central Pennsylvania, died at Hollidaysburg, October 7th. He was twice president of the State Medical Society.

Ambulance Wrecked.—The ambulance of Hahnemann Hospital was completely wrecked October 5th by colliding with a trolley car. Both the surgeon and driver escaped with slight injuries.

Large Bequest.—Charles Edward Orme has left an estate of $50,000 to the Episcopal Hospital. The income is to support as many free beds as possible.

Indictment of Faith Curists Changed.—On August 31st the Grand Jury indicted Sheets and Sellenberger, keepers of "The Beulah Orphanage," for the murder of a baby seven months old. The October Grand Jury has changed the indictment to one of manslaughter.

Resignation of Dr. Neff.—Dr. J. S. Neff has resigned from the Board of Charities and Correction. Dr. Neff, who is also medical director of the Jefferson Hospital, refuses to confirm the report that he resigned because of the mayor's attempt to revolutionize the Department. W. J. McLaughlin, a retired banker, succeeds Dr. Neff.

Reported Lockjaw from Vaccination.—Two deaths from vaccination are reported from Erie, where smallpox has lately been prevalent. The last is said to be due to lockjaw. The girl was vaccinated two weeks ago and attended school regularly after it.

Clinics at the Almshouse.—At the suggestion of Dr. Shoemaker, President of the Board of Charities and Corrections, the clinics are to be made more attractive at the Philadelphia Hospital. This is for the benefit of the medical students of all the colleges in the city. Members of the visiting staff are also to be allowed the use of the wards for small classes in bedside instruction.

Hospital Sued.—John F. Matthews and wife have instituted a suit against the Presbyterian Hospital and a physician connected with it because of the death of their son. The boy was injured in a carriage accident, but was allowed to go home after an examination. Shortly afterward he was admitted to the hospital when serious symptoms developed, and he soon died.

The Angiotribe.—At a meeting of the Obstetrical Society, October 4th, Dr. E. E. Montgomery reviewed the methods of hemostasis in abdominal surgery. While in Paris the past summer he saw Doyen operate and use the angiotribe. This instrument he uses to crush the tissues and make a groove for a ligature. Montgomery believes the instrument to be useful in dealing with thick tissues, but would always put on a ligature in addition. He advises catgut rather than silk ligatures, having used them for several years without their giving trouble.

Spinal Cord Anesthesia.—Two operations by this method of anesthesia have been done in this city recently, both being reported at the College of Physicians October 3d. Dr. W. W. Keen's patient was a negro, aged fifty-one years, who had a large scrotal hernia. It was feared that reduction of the mass would impede respiration if general anesthesia was used. Eucaine was injected into the cord, Dr. Keen preferring this because it is more readily sterilized than cocaine and because it is less toxic. Half an hour after the injection was made nausea and vomiting began. The operation was completed in one hour and the man did not complain of pain, although a prick of the skin at the ankle was readily felt. The patient is now doing well, there being no unfavorable after-symptoms.—Dr. W. L. Rodman reported the removal of a bursa from under the semimembranous muscle, spinal anesthesia being used because of damaged kidneys and the prone position. There was decided nausea and vomiting five minutes after the injection, cocaine being used. Anesthesia was absolute. The patient's pulse was only 52 per minute one hour after the operation, but was strong and the man felt comfortable. These two operations, both done the same week, were the first to be done by that method in this city.

CHICAGO.

Chicago Surgical Society.—The annual meeting of this Society was held at the Chicago Athletic Club, October 4, 1900. The following officers were elected for the ensuing year: President, Dr. Christian Fenger; Vice-President, Dr. J. B. Murphy; Secretary, Dr. Daniel N. Eisendrath, reelected; Treasurer, Dr. E. J. Mellish.

Vaccination Reports.—Reports from the physicians assigned by the Department of Health to vaccinate the general public were recently received, and they show a flattering condition of success. About 140 physicians have been given the office of city vaccinator. The aggregate number of vaccinations is larger than ever before during a period when smallpox does not prevail. But what is most gratifying to the health officials is the fact that there is much less opposition than ever before. Glycerinized virus is used, which is said to be absolutely free from any extraneous germs, and there is no possible danger of any ill results, such as were encountered formerly.

Revocation of Certificates.—In a decision handed down October 4th, the Appellate Court ruled that the State Board of Health, under the act of 1899, has no power to discipline medical practitioners licensed before July, 1899, or to revoke

physicians' certificates issued prior to that date. The ruling is made in the case of Dr. William Frank Ross, who was licensed as a doctor in 1895 and who was summoned before the State Board of Health in September, 1899, to show cause why his certificate should not be revoked for alleged unprofessional conduct. Counsel for the State Board of Health argued that if the act of 1899 limited the powers of the Board to certificates issued after its going into effect, then under the previous act of 1877 it still retained authority to discipline physicians. After discussing the contentions advanced, Judge Windes, who voiced the opinion of the Reviewing Court, ruled that the act of 1877 was repealed by the later act of 1887, which itself was expressly repealed by the act of 1899, thus leaving the Board of Health acting solely under the 1899 act. Before the appeal to the Supreme Court was prayed, the matter was placed before the Board of Health. It may be that an attempt will be made to procure the passage of an adequate statute by the Legislature instead of a reversal of the Appellate Court ruling.

Appointment of Dr. Lemke.—Dr. August F. Lemke has accepted a position in the department of Didactic Medicine in the Northwestern University Medical School.

Changes in the Faculty of the Chicago Policlinic.—Dr. Norval H. Pierce has accepted the Chair of Otology in this institution, Dr. Otto T. Freer, that of Laryngology and Rhinology.

Commencement Exercises of Rush Medical College.—Eleven candidates received the degree of Doctor of Medicine at the commencement exercises of Rush Medical College, held October 5th. Formerly these exercises were held in June, but the affiliation with the University of Chicago has caused a change in the date. Dr. L. F. Barker delivered an address on "The Study of Anatomy," in which he reviewed the wonderful progress in anatomy and other branches of the healing art during the last century, and spoke of the great improvement in the methods of teaching in the medical schools of our time. Dr. Frank Billings, the Dean of the Faculty, read his annual report. He pointed to the success of the quarterly system, which was introduced two years ago, and said that the number of students during the summer course was nearly double that of last summer. He referred to the higher standard required from applicants for admission to the college, and said that nearly fifty per cent. of the applicants were rejected. He expressed great hopes for the success of the elective system.

Epidemic of Diphtheria.—Dr. C. S. Nelson, Special Inspector of the State Board of Health, and Dr. M. M. Hill, Bacteriologist, sent to Rosehill, Jaspar County, Illinois, to make a detailed examination of an alleged epidemic of diphtheria, made a report to the State Board of Health October 5th. There were 100 cases of diphtheria and 30 deaths, no quarantine, and the disease was spreading rapidly. One case had been diagnosticated as tonsillitis by a physician. Rigid quarantine will be established.

GENERAL.

Proposed Legislation for Inebriates in Ontario.—Before the conference of the Canadian Charities and Correction Convention, which assembled in Toronto lask week, Dr. Gilbert Gordon, President of the Toronto Medical Society, outlined the plan for dealing with the inebriate class of the community. Legislation is to be introduced into the Ontario Parliament at the next session. The Government will be called upon to appoint a superintendent, whose duty it will be to organize the medical treatment of this class on the probation system. In cities of 20,000 or over a probation officer will be appointed who will have the supervision of inebriates under suspended sentence. Wards will also be arranged for in the General Hospitals of the province. The scheme has already been endorsed by the Ontario and Canadian Medical Associations.

Wonderful Beard.—Samuel Fries, a farmer of near Steinville, Lehigh County, Pa., who raised a beard nearly six feet long, died October 2d. He seldom displayed his whiskers, which he kept concealed beneath his coat.

An Insect Which Excretes Camphor.—O. F. Cook (*Science*, October 5, 1900) describes a small insect, Polyzonium rosalbum, which excretes a substance smelling strongly of camphor. It is the only instance known in the animal world.

Modifies Its Quarantine.—The Louisiana Board of Health has modified its quarantine against Central American ports, and vessels from all ports in the Gulf and Caribbean Sea where no yellow fever prevails will be allowed to come to New Orleans without quarantine detentions after October 15th.

Helen Keller at Radcliffe.—At the recent entrance examinations at this college Helen Keller, the phenomenal deaf mute, passed with distinction.

Death of Plague at Cardiff.—A sailor who recently arrived on the Tyne from Rosario, Argentine Republic, became ill. He went to Cardiff, Wales, where he died October 7th of the bubonic plague.

A German Departure.—The Berlin president of the police force has recently appointed Dr. Agnes Hacker medical officer to the female prisoners in the Prussian penitentiary.

No Doctor for Sick Child.—The daily press reports a case of typhoid in East Orange which no regular physician is attending, and the patient, a child, is being attended by Christian Scientists.

This much Health Inspector Bowman and Health Officer Winthrop Mitchell admit. They refuse to tell the name or the residence of the sick child. It is said that no law exists which allows a Board of Health to interfere in a case where a regular physician is not employed. The only provision that can be taken advantage of is in case the patient dies without having received treatment from a doctor. Christian Scientists are not vested with the right to sign burial certificates.

New Color Blind Test.—The judges of the Paris Exposition have awarded a first prize gold medal to Prof. E. W. Scripture, head of the Psychological Department of Yale University. Prof. Scripture sent to Paris as an exhibit from the United States Government a machine for testing color-blindness. The machine has proved all other methods for making such tests fallible and is likely to become the official testing machine, not only of this Government but of the world. It has attracted much attention in Paris and was proved to be a necessity in the navy, where to be able to properly distinguish signals is absolutely necessary to an official.

New Chair for Prof. Chittenden.—Prof. Russell H. Chittenden, Director of the Sheffield Scientific School, has been elected professor of physiology in the Yale Medical School. He recently declined an offer to take charge of the Department of Physiological Chemistry in Columbia University. His relationship to the Sheffield Scientific School will not be affected. Dr. Yandell Henderson, who has been an instructor in the Sheffield Scientific School, will be Prof. Chittenden's assistant in his work in the medical school.

Typhoid Fever at Newport.—An epidemic of typhoid fever in Newport is now manifest, and it has reached such proportions that a special meeting of the Board of Aldermen was called October 8th, to take action in the matter. Newport has no Board of Health composed of medical men, the Aldermen acting in that capacity, and on this account it is much harder to deal with such cases. There are probably fifty cases of the fever in the town. The Newport Hospital is full and cases are waiting for admittance. So great has been the demand for hospital accommodations that the Aldermen to-day appointed a committee to arrange for the establishment of an emergency hospital. It was also directed that the city water be examined. A great many of the cases are of a mild type. Cases have appeared in all parts of the city.

Yellow Fever in Havana.—The officials of Cuba are considerably alarmed over the yellow-fever record in Havana for September. It has not been so large in two years, and exceeded the previous month, when 220 cases were reported. The September record is 269 cases. The number of cases on September 1st was 89, and a report just received from the War Department shows that the disease increased rapidly, reaching 269 on September 30th. Fifty-two of those stricken died, while 218 recovered and were discharged from the hospital. On September 30th 88 patients were under treatment. By October 2d this was increased to 96, there being 15 new cases on that day. Four were discharged and three died. Of the 96 cases 19 were Americans. The report says: "The disease was more general among the Americans during September than any time during American occupation of the island. While the death-rate among the Americans was small, the total death-rate was 20 per cent. Non-immunes as well as others have been stricken. The outbreak has not been confined to any one locality. It has appeared in all parts of Havana, including all the suburbs." Two cases have appeared at Gen. Wood's headquarters in the palace. The first was that of Mr. Omer C. Blizzard, Gen. Wood's stenographer; another was a watchman at the palace.

Concentrating Consumptives.—*The New York Times* says that the largest plan ever known for a concentration of the consumptives of this country to one section came to light October 4th in Fort Stanton Reservation, 150 miles south of Santa Fé, where the United States Marine Hospital for consumptives is located. The Ancient Order of United Workmen made application to the Government for permission to erect a sanitarium for consumptive members on the reservation, and the Woodmen, Odd Fellows and other secret orders followed rapidly. A plan to allot each State desiring it sufficient ground for a sanitarium is being seriously considered, owing to the prevalence of tuberculosis in portions of the East.

Koch and Malaria.—The daily press so rarely comes within many miles of the truth in medical matters that it is a pleasure to find an accurate summary of the recent Koch headlines in our esteemed contemporary, *The New York Times*. It says: "As might have been expected from the previous course of Dr. Robert Koch, there is not a word in the announcement of his successful investigation of the cause and cure of malaria to indicate that he is not alone in this field of study, or to hint that he has simply been following a line carefully marked out long ago by other scientists and since developed by them with an industry and ability at least equal to his own. This is not to say that the Berlin bacteriologist is neither industrious nor able; he is both to a high degree; but his reputation—out of Germany, at any rate—is that of a man not less businesslike than scientific, and he has been charged before now with a somewhat unprofessional tendency to monopolize glory and profits in a way not quite compatible with delicacy of sentiment. His recent labors in China have apparently brought nearer to the point of actual demonstration the theory that malaria and mosquitoes are closely related, but that is not his theory, except by adoption, and he might well say more than he does about the English surgeon stationed in India who

originated it, and about the men of the same and other nationalities who have done so much to lend it credibility. The omission, however, is of no great consequence. If malaria can be prevented or cured, it makes little difference by whom it is done, and little, in a practical way, whether or not the incidental glory is justly distributed. Success means the multiplication by two or three of the portion of the globe on which civilized men can live, and it will do more than any other one thing to lighten the task of carrying law and order through the region bounded by the two tropics."

German Milk Regulations.—According to an official report from the United States Consul at Leipsic, Germany, the municipal council of that city has recently adopted new and stringent regulations governing the local milk supply. An elaborate inspection service is provided and inspectors are authorized to take samples, not to exceed one-half liter in quantity, at any time or place until the commodity is in the hands of the actual consumer. Compensation is allowed for samples that pass the test of analysis. All cans and bottles containing milk must be so labeled as to show the quality of their contents according to the classification noted below. Other regulations provide for the inspection of all cows (including the tuberculin test) and the persons having the care of them, all stables and premises on which milk is stored or offered for sale. Milk for children may be sold only by producers who obtain a special permit for such traffic and comply with certain additional sanitary and hygiene requirements. The four grades of legally salable milk are as follows: (1) Full milk, first quality, which must contain at least 3 per cent. of fat and must have a specific weight of 1.028-1.034 at 15° C.; (2) full milk, second quality, which may contain less than 3 per cent. of fat, but the exact proportion must appear on the label; (3) skimmed milk, which must contain at least 1 per cent. of fat and must have a specific weight of 1.032-1.038 at 15° C.; (4) milk for children, which must be full milk, first quality, obtained from cows whose food and condition of health are directly under the constant supervision of a veterinary surgeon, acting under authority from the city officials, the said cows having no serious ailments. Prohibited is the sale of milk from animals afflicted with disease, especially tuberculosis, anthrax and distemper; from cows during the eight days immediately subsequent to calving; from localities in which typhus or cholera epidemics exist; and such as is bitter, slimy, nauseous, spoiled, abnormally colored or adulterated. When adulteration is suspected the samples secured may be compared with others obtained at the stables directly from the same cows. For the purpose of preliminary examination each inspector is required to have Quevenne milk scales and a Feser lactoscope, the former to determine the specific weight and the latter the fat percentage. Before applying these tests the milk is to be well mixed, by the dealer himself if he prefers. If the milk fails to correspond with the label on its container, a half liter sample is to be taken for chemical analysis, a similar sample to be given, sealed, to the dealer. Unlabeled milk is considered full milk, first quality. If an inspector has good reason to believe that milk which stands the tests as to specific weight and fat is offered for sale in violation of the regulations concerning cleanliness or adulteration, it is his duty to confiscate it and lodge a special complaint against the owner.

The Juice of the Oyster.—It may not be generally known, says the *Sanitary Record,* that the fluid which surrounds the oyster bears a closer analogy to the gastric secretion than anything else in nature. In addition to the solvent properties of this fluid it is not without its nutritive properties. Consequently as little as possible of the juice should be lost.

CORRESPONDENCE.

SEPSIS AND TOXEMIA.

To the Editor of the MEDICAL NEWS:

DEAR SIR: I am much indebted for your consideration and will say in reply to the kind remarks of Dr. Eshner that the intent of my paper of September 22d was to qualify the meaning of the term "sepsis" and "septicemia" in connection with the acute infectious diseases, if not its use. As he so justly remarks the terms have hitherto been used in a most vague and indefinite, if not ambiguous, manner. But if the specific infective organisms are recognized as having inherently the quality of invading the tissues through (possibly) some special toxic influence developed according to environment, *then* the term "sepsis" becomes qualified in these diseases, more "definite" and not "ambiguous," since the condition is the result of the development of an inherent quality. It becomes modified to the extent that it no longer occupies an undetermined place, but is the *opposite* of "toxemia," not bearing, it is true, the sense of harm to the individual *because* of the presence of the bacteria, since symptoms in these cases depend upon the continued elaboration of toxins.

"Intoxication" is a term applicable to symptoms arising from a number of causes, but when used in relation to the infectious diseases it is qualified and well defined; and so does the term "sepsis" take on a new definition in such connection. "Bacteremia" is rather ill defined and does not convey the idea that the clinical symptoms of sepsis are present. The term "infective," as applied to this condition of invasion of the blood by the specific germs by Baumgarten, is not appropriate, since it is also applied to the influence of the primary colony of the germ, and should not be used as a term distinctive of the specific sepsis.

EUGENE WASDIN,
United States Marine Hospital Service.

Buffalo, N. Y., October 5, 1900.

ELIMINATIVE AND ANTISEPTIC TREATMENT OF TYPHOID FEVER.

To the Editor of the MEDICAL NEWS:

DEAR SIR: In the reported proceedings of the Canadian Medical Association meeting published in the MEDICAL NEWS there appears under the heading of "Eliminative and Antiseptic Treatment of Typhoid Fever" a brief abstract of my paper. I had in that paper protested against the misrepresentation I had received in certain quarters. Your reporter furnishes an apt illustration of what I complained of, and in this short abstract has managed to distort and misstate what I said to an extraordinary degree. For example, I am reported in this abstract as holding "the opinion that the drainage from the intestinal wall following upon the action of a purgative, such as calomel and magnesium sulphate, would tend to get rid of some of these bacilli in the *intestinal walls,* but would not effect their exit from the liver, etc."

I had in the first part of my paper quoted from the recently published Gouldstonian Lectures, delivered before the Royal College of Physicians of London by Dr. P. Horton-Smith, on "Typhoid Fever and the Typhoid Bacillus," to show the correctness of my contention of seven years ago that the specific bacilli were present in the intestinal contents during the first days of the fever —not absent from the intestinal contents as has been asserted—and consequently that the soundness of my theory of their being swept out by the action of purgatives, thus limiting the infection of the body and of the glands in the intestinal wall, became perfectly obvious. Then followed the paragraph referred to, which I shall quote in its entirety:

"Elimination must not be confined to simply clearing out the intestine, but must apply to a much wider process; the clearing of poison from the body by way of the intestine either in the toxic bile or contained in the serous fluid poured from the intestinal wall.

"It is amusing after having made so many explicit statements and having drawn attention so many times to this feature to find Prof. Osler gravely pointing out to his readers 'that, unlike cholera, the typhoid bacilli are not confined to the intestine, but are to be found in the spleen, intestinal glands, etc., and consequently that they cannot be dislodged by the use of purgatives.'

"I shall again be explicit in the statement that the eliminative plant of treatment does not contemplate removal of bacilli from the spleen, intestinal wall and various tissues of the body, but does contemplate elimination of *bacilli and poisons from the intestine* and of *toxin from the body by way of the intestine.*"

A second example: I am made to say that I had never had a fatal hemorrhage and that I had *but few perforations.* What I did state, after pointing out that twenty per cent. of the mortality of typhoid fever had been attributed to perforation and hemorrhages, was that "in my own experience I had never had a fatal hemorrhage and but few hemorrhages, nor have I had in all these years a *single perforation.*"

I am sure you will agree with me that it is most unfortunate when mistakes like the above occur, utterly false impressions are received by an immense number of readers, and it frequently happens that this impression remains since many who have read the report will fail to notice the correction. W. B. THISTLE.

171 College Street, Toronto, October 4, 1900.

OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, September 29, 1900.

THE OUTBREAK OF PLAGUE IN GLASGOW—HOW THE PLAGUE WAS FOUGHT IN SYDNEY—THE SOUTH AFRICAN HOSPITAL COMMISSION—EVIDENCE OF LORD ROBERTS—DEATH FROM GAS-POISONING—DANGEROUS CHANDELIERS.

FIVE new cases of plague have occurred in Glasgow so that the hope expressed in my last letter that the epidemic had spent itself has not been quite justified. There are now 22 cases. Four of the new patients are members of one family, consisting of mother, grown-up daughter and two children. The family had associated with persons suffering from plague. The fifth patient is the wife of a man employed in the hospital. Dr. Cantlie, whose experience in the East especially fits him for the task, has been deputed by the *British Medical Journal* to inquire into and report on the outbreak. He states that the steps taken as regards segregation of "contacts," disinfection of premises, and treatment and isolation of patients, leave nothing to be desired. There is no evidence to show how the people in the house in which the outbreak started became infected. A peculiarity of the outbreak is that it occurred at some distance from the harbor, and that the infected area is not opposite the part of the river where ships lie. Infected rats may have found their way along the sewers, but of that there is no evidence; moreover, if rats had been the cause a more general outbreak would in all probability have occurred. There are several types of plague—bubonic, pneumonic, intestinal, typhus and fulminant (which causes death without characteristic signs or symptoms). The original cases in Glasgow were of the intestinal and pneumonic types, and simulated typhus and typhoid fever, and simple pneumonia, so that only by bacteriological examination could their nature be determined. It is highly credible to the Glasgow faculty that the disease was so speedily recognized.

In connection with the Glasgow outbreak a report by the special correspondent of the *Lancet* on the Sydney outbreak is of interest. Sydney contains a population of 456,000, all being whites except 4000 Chinese. The first case appeared in

January, and up to July 28th there have been 302 cases and 102 deaths. After the appearance of the first case it was requested that all cases of illness of a doubtful character should be reported to the sanitary department. Such cases were examined and diagnosed by a staff medical officer. On the appearance of the second case the coroners were desired to report all uncertified cases of death in which there was suspicion of plague, in order that examination of the bodies might be supervised and a safe burial ensured. Haffkine's prophylactic serum was used to inoculate the staff, "contacts," and persons inhabiting the parts of the city which appeared to be dangerous. Posters and pamphlets were used to disseminate information on the plague. Those parts from which numerous cases had been removed were dealt with under the quarantine law, surrounded by a guard, and thoroughly cleansed. A staff was organized for the destruction of rats. The sewers were frequently fumigated with burning sulphur, which killed some rats and drove large numbers to the sewer-mouth, where they were destroyed. No vessel trading with Sydney was allowed to communicate with the shore at other ports unless it had been fumigated and the rats destroyed. Vessels were forbidden to lie at wharves except under regulations calculated to prevent the landing of rats from them. A part of the maritime quarantine station was equipped and utilized as a plague hospital. As soon as a case of plague was diagnosed 40 cc. of Yersin-Roux serum were administered subcutaneously. On arrival at the quarantine station protective inoculation was offered to all "contacts," but was rarely accepted. They were deprived of their clothes and given clean ones. Their clothes were restored to them after disinfection and after five days they were discharged. The bodies of persons who died from plague were enveloped in a sheet soaked in sublimate solution and placed in light coffins with watertight joints. The coffins were enveloped in coarse sheeting also soaked in sublimate solution. They were buried in a sandy soil on a slope falling toward cliffs above the Pacific.

The Hospital Commission has held further sittings at Bloemfontein. General Kelly-Kenny paid a tribute to the orderlies who carried a number of Boer wounded across a river in which they were up to their armpits in water—a service which was purely voluntary. Lord Roberts gave valuable evidence showing the difficulties of transport. He said that on entering an unknown, sparsely populated, and hostile country, it was absolutely necessary to take large food supplies and the number of mules, horses, and forage for these was limited. Rapid movement was possible only by cutting down the equipment of the field hospitals and other details. In Bloemfontein everything possible was done for the sick and an unlimited order was given to commandeer everything obtainable. The enormous difficulties which had to be overcome were shown by the fact that from March 13th, when Bloemfontein was reached, to Mach 28th not a single truck was able to cross the Orange River and no food was obtained from the base. For sixteen days therefore there were no supplies and but few medical comforts obtainable, although 40 trucks or 400 tons of food were required for men and animals. From March 29th until April 7th the trucks sent to Bloemfontein were 105 less than the number required for the daily supply. From April 7th to 17th 503 trucks arrived—11 less than the number necessary. The troops were only just fed and not one day's reserve was accumulated. Sixty-two trucks with hospital stores came in during that period. Every day's delay in Bloemfontein made matters worse and food for further advance had to be accumulated. At Kroonstadt everything obtainable was commandeered and ladies came crying that mattresses and beds were taken from under them. Lord Roberts thought that no blame attached to the home authorities in reference to the supply of stores and equipment. The campaign had been extraordinarily difficult from the hospital point of view and in his opinion the Royal Army Medical Corps, assisted by the civilian surgeons, had met the difficulties magnificently.

A death from gas-poisoning in Birmingham shows the danger of the "gas chandelier" or water-slide pendant, which the *Lancet* severely condemns and thinks no prudent householder should allow in his house. The water is always evaporating and the need of replacing it is easily forgotten. Further the sliding tube and chains supporting the weights easily become defective, allowing the bracket to drop below the water seal and the gas to escape. This is what actually occurred in the present case. The chandelier was in such a bad condition that one of the chains was tied with string while the other had been mended with wire in three places. A man and his wife retired in good health. They awoke early in the morning with headache. The woman went to sleep again and remembered no more. The man appears to have left the bed and fallen across it. About 9 A. M., as they could not be aroused, the door was burst open. The man who entered the room declared that the smell of gas was not particularly strong, and although he could not arouse the sleepers the suspicion that they were asphyxiated did not occur to him until a later visit when he made another unsuccessful attempt to awake them. The man was past all aid and his wife was only snatched from death by several hours of artificial respiration. It appears that the deceased had only just entered into possession of the house. His wife said, "How the gas smells," and he replied that it would be repaired next day. The modern method of mixing coal gas with carburetted water gas greatly increases the proportion of CO and therefore produces a more poisonous gas. This fact accounts for the increased number of cases of gas-poisoning which have occurred of late. These cases have been unusually fatal and have excited much popular attention.

OUR MADRID LETTER.

[From Our Special Correspondent.]

MADRID, September 20, 1900.

MEDICAL MADRID AND THE NEXT INTERNATIONAL MEDICAL CONGRESS—RAMON Y CAJAL—HIS UNIVERSITY WORK—SALARIES OF UNIVERSITY PROFESSORS.

THE next International Medical Congress is to be held down here in the Spanish capital and suggests the thought that some notes on medical features of the city would be of interest to readers of the MEDICAL NEWS. About medical matters in general there is not much to be said. The Spanish Government has not been very liberal in its appropriations for medical purposes during recent years and ten years is an age in the history of modern hospitals, while half a century brings one back almost to barbarism in the matter of hospital arrangements and appointments. The hospitals of Madrid are practically all old and old-fashioned. They remind one very much of the older hospitals in Paris. The wonderful thing is that in such seemingly unsuitable quarters excellent surgery has been done in recent years. Spanish surgeons accomplish successfully all of the operations performed by their colleagues across the Pyrenees. In the department of abdominal surgery particularly they have been bold and singularly successful.

The Medical Department of the University of Madrid possesses a large building with a handsome facade. The clinical department is, however, very old and ill arranged. A magnificent set of balconies enclosed in glass forms a notable exception in the midst of the universal lack of invitingly suitable quarters for the sick. These enclosed balconies are and have been for centuries a feature of Spanish life in general. Here in the hospital they make an ideal place for tuberculous patients of which there is no lack among the Spanish population in spite of the reputation the Peninsula generally bears as a resort for the consumptives of other countries. The teaching department of the University is in a more recent building, but is sadly hampered for lack of room. There is the promise that within the next year the Spanish Government will appropriate a considerable sum for the enlargement of this building. It is considered almost certain that the new departments will be finished before the holding of the International Congress. These new structures will furnish suitable places for the holding of the section meetings and for the varied business of the Congress, the management of which is becoming with each succeeding session a more and more difficult problem.

It is in the present unsuitable quarters that Ramon y Cajal has worked for the last ten years. In spite of the discouragement of his surroundings he has succeeded in continuing here the investigations begun at Valencia and Barcelona that so deservedly won for him the prize of Moscow, at the recent International Medical Congress at Paris. His professional position gives the best possible idea of the present state of medical teaching in Spain. It serves to show particularly the difficulties under which medical teaching is carried on and makes truly wonderful the reasonably high average of success that is attained by it; for the average Spanish practitioner is not below his confrères of other countries.

Prof. Ramon y Cajal is primarily the teacher of histology. His department includes, however, all works involving the use of the microscope. He teaches pathological as well as normal histology. Moreover, it is to him the students look for their instruction in bacteriology. To his department are sent from the general hospital all the excreta—sputum, feces and urine—that are to be examined microscopically for the wards and for the clinical teaching in the medical departments. It is under his direction that are made the Widal test and all the blood examinations. This might seem sufficient for one man, but in addition to doing all the microphotography of the hospital, it is under his supervision that all ordinary photographs of patients before and after operations and the like are taken. In this part of his work Prof. Cajal takes great personal interest. He is and has been for twenty-five years an expert photographer. He was one of the first in Spain to make the old collodion plates that succeeded the original daguerreotypes, and even dealers applied to him for plates in the early days because of his skill. Like many of the successful medical investigators of the century, Claude Bernard-Schwann, Brown-Séquard, and others, Cajal is evidently what we call in America a "handy" man.

Despite the burden of labor on his shoulders, Cajal's only complaint is that he has not proper facilities for his profesional work nor for his original investigations. All of his labor must be accomplished in very cramped quarters. Besides, there is the question of money. The allowance for laboratory work made out of the University budget is so small that there is practically no question of experimental work upon animals. As it is, most of Cajal's investigations have been conducted entirely at his own expense.

It is interesting in this connection to note the amount University professors are paid as salaries. I was credibly informed that at Madrid the holder of a full University professorship receives during the first five years of his professoriat 4000 pesetas a year; that is supposed to be $800 per year; but a peseta, owing to the state of Spanish finance, is really not worth 20 cents, in fact, barely 15. This reduces the salary to $600 a year. Those who think that living is cheaper in Spain than in America should visit the country and be convinced that, on the contrary, all the ordinary necessaries of life are really dearer. After each successive five years of teaching the

salary is raised 500 pesetas, that is, about $80. The salaries in the provinces at the Universities of Valencia, Saragossa and Barcelona, where Cajal taught before being called to Madrid, are, as might be anticipated, even smaller than those at the capital.

That Cajal has accomplished the work he has is under the circumstances a never-ending surprise. It has not been without leaving its traces, however. He looks older than his forty-six years and has not been as well as he should be during the past year or two. Poor health has delayed the publication of his second volume on the minute anatomy of the nervous system. The work is now practically complete, however, and will shortly be published. The recent award of the prize of Moscow was a most welcome acknowledgment of the worth of his labors, and the 5000 francs will prove a substantial reward. It has left him as modest and unassuming as before, kindly, cordial, most grateful for his reception in America last year. He looks forward to much more substantial allowances for medical work from the Spanish Government now that its colonial burdens are transferred to broader shoulders.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

NECROSIS OF THE UTERINE CERVICAL STUMP—PREVENTION OF UNTOWARD RESULTS IN VAGINAL AND ABDOMINAL SURGERY—DYSMENORRHEA.

C. Ryall, at the British Gynecological Society, July 13, 1900, showed a rare and interesting specimen of necrosis of the cervical stump after supravaginal hysterectomy. E. S. Bishop (Manchester) introduced a discussion on the untoward results of vaginal and abdominal surgery and on the best means to prevent the same. Any unfavorable outcome of an operative procedure is active in deterring future patients from seeking relief thereby early enough to do good, in increasing discouraging statistics of and disfavor toward the special operation and in more or less discouragement to the surgeon himself. His illustration was taken from hysterectomy for fibromata and the chief difficulties cited were: (1) Fatality, due to delay in undertaking the operation and to sepsis. Early purgation and its importance were explained with operative technic; (2) ventral hernia, best avoided by successful asepsis, carefully placed layer sutures and celloidin; (3) intestinal and omental adhesions, making careful reconstruction of the potential peritoneal cavity necessary; (4) vaginal prolapse again indicating restoration of the layers of the pelvic floor; (5) persistent sinuses resulting from imperfectly sterile sutures and applied drains; (6) various other accidents.

H. Smith preferred subperitoneal hysterectomy to panhysterectomy and an incision about one inch to either side of the linea alba to prevent ventral hernia by making more layers to suture.

C. Martin (Birmingham) in contrasting the various methods of hysterectomy said the cervical stump is of no service and only theoretically prevented vaginal prolapse. He never yet had seen such a result of panhysterectomy. He had always been opposed to buried sutures as predisposing to ventral hernia, but, having adopted the method of Greig Smith of boiling chromic-acid gut in xylol and absolute alcohol, he had not yet had any stitch abscesses from buried gut. The three-layer method of suture he considers best. Macnaughton-Jones prefers the supravaginal method for ablating the uterus.

E. T. Davies (Liverpool) said fibroids often give no symptoms and are of importance only from an esthetic point. Hence it is not easy to determine when to operate. Baer's operation is his preference, next panhysterectomy.

C. Ryall considered ventral hernia due usually to drains. He always drains through the pouch of Douglas or by the method of Muscatello. Stitch abscesses appear due to infection of the hands by intestinal or neoplasm contents during the operation.

R. Bell (Glasgow) considered the danger of abdominal section due entirely to sepsis. The intestines cannot be the source of sepsis, because, if they were, why did not ordinary constipation cause it?

J. W. Draper (Heddersfield) reported fifteen cases of fibroid in his own practice where the tumors had been left. In one the ovaries were removed and in a second a pedunculated fibroid had been ablated. He thought greater conservatism advisable.

W. J. Smyly (the President) said that early operation is wise. He had seen a large fibroid forced into the vagina and suppurate, malignant degeneration and almost fatal hemorrhage result from delay. The suture method praised by any man usually is the *last adopted*. Since patients do not commonly return to the operator responsible for a hernia, each man sees few in his own practice, but many in that of other men. Celloidin does not appear to him to offer much. An aseptic wound will heal with any dressing. If infected, celloidin does little.

F. W. N. Haultain, at the Edinburgh Obstetrical Society, July 11, 1900, discussed dysmenorrhea. The pain, erroneously regarded by the lay mind as often physiological and therefore not worthy of attention, may be localized in the pelvic viscera or referred to distant organs, as the brain, stomach, heart, etc. All rational treatment must be directed to one or the other of the two causes, inflammation or congestion and obstruction. When resistance to the outflow is present, contractions take place causing cramps in the endeavor to expel the fluid or clotted blood past the flexion, tumor, stenosis or other obstruction. In inflammation the physiological congestion of the menstrual flow adds to the tur-

gidity, pain ensues and becomes relieved when the flow appears. In ovarian and tubal dysmenorrhea the pain is usually premenstrual; in uterine inflammation the congestion of the menses may increase and the pain continue through the period; in inflamed and congested ovaries the pain also precedes and pervades the whole period. In managing these cases stenosis, displacements, and tumors must all be removed. Gradual dilatation in all and incision in addition in selected cases, with curetting for concomitant endometritis, are the indications in stenosis. Any patency so gained must be maintained by after-treatment. Among drugs opium and alcohol are to be condemned, while the bromides, iodide of potassium, camphor, gelsemium, hydrastis, hot applications, hip baths, counterirritants, etc., all help. Oophorectomy may be done for advanced disease. Treatment should always be tried perseveringly.

In the discussion it was agreed that examinations of the unmarried except under chloroform had best be avoided; local treatment should in them be begun with care, but for diagnosis and cure both are necessary often. Further the following points were elucidated. H. M. Church considered prevention more important than cure; hence when girls begin this function their general health needs attention. Plenty of good food, of open-air life and of proper exercise are needed. Often the cervical mucus, supposed to prevent the blood from coagulating, is deficient. Tonics will cure this. Salicylate of soda in the rheumatic is also an excellent drug.

Professor Kynoch (Dundee) uses the tupelo tent for twelve hours; plugs with gauze for forty-eight hours and repeats. In this way very good dilatation which lasts a long time can be secured and with care sepsis avoided. Heat in douches in the recumbent position is very beneficial. An instrument devised by Stratz protects the skin from the return flow, so that a higher temperature can be used. Oophorectomy is indicated only in atrophic and hysterectomy only in atresic states.

I. Connel (Peebles) has seen many severe cases improve after marriage, relief of chronic constipation and adoption of bicycling.

J. M. M. Kerr (Glasgow) considers dysmenorrhea a symptom expressing a disease whose site and cause must be known. It is just as unjustifiable to diagnose "dysmenorrhea" as "menorrhagia." In an analysis of sixty cases he found in three abnormally small uterus, in six stenosis of the cervix, in sixteen pathological anteflexion. Iodide of potassium and salicylate of soda are often invaluable.

A. H. F. Barbour finds improving the morale of the patient, taking her mind off herself and devoting her energies to others, is of importance. S. Weir Mitchell does much by rest and food to improve the central nervous system, establishing the fact that the degree of pain depends largely upon neurasthenia, the state of the peripheral and central nervous systems. A course in arsenic and antipyrine at the time of the flow is excellent.

J. Ritchie directed attention to the cure of anemia and rheumatism as such as a preliminary step.

Holmes (Chicago) spoke of a case of defective innervation of the uterus so that parturition was painless until the vulva was reached, illustrating the fact that excess of innervation might cause increased menstrual trouble.

J. W. Ballantyne considered proper any means to learn the cause of the trouble, because without such knowledge the treatment is impossible.

Professor Saenger of Prague and Professor Fehling of Halle were elected Honorary Fellows of the Society.

SOCIETY PROCEEDINGS.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Thirteenth Annual Meeting, Held at Louisville, Ky., September 18, 19 and 20, 1900.

(Continued from page 554.)

Second Day—September 19th.

Ectopic Gestation.—Dr. James F. Baldwin of Columbus, Ohio, gave a brief account of six cases of tubal pregnancy which, added to five similar cases previously reported by him, made eleven cases in which he has made a diagnosis of tubal pregnancy and has operated before the occurrence of rupture, his experience having been in direct contradiction to the dictum of Lawson Tait that such an early diagnosis is not possible. His argument is that in a large number of cases such an early diagnosis is entirely feasible. The following points will usually be found in these cases: The patient gives a history of several years of sterility (many exceptions); she has missed a menstrual period, perhaps two of them (numerous exceptions); she has noticed some unusual pains in the pelvis, which she will probably describe as boring, griping, or colicky in character, these pains being situated usually in the region of an ovary. She has perhaps within a few days of the time of consulting her physician had a more or less irregular hemorrhage; perhaps has discharged pieces of membrane which she supposed indicated an abortion, and consults her physician with the idea that such is the case, owing to the hemorrhage and the pain and the suspicion of an existing pregnancy. On making a vaginal examination, if the conditions are at all favorable, the examiner will find on one side or the other of the uterus, or back of it, a fusiform, quite well-defined cystic tumor, about the size of a pullet's egg or a little larger. This tumor will probably be tender on pressure, symmetrical in outline, and usually

distinctly pulsating. When such a tumor is found in a woman in whom we have reasonable grounds to suspect a pregnancy, when the uterus at the same time is found somewhat enlarged and having the feel of pregnancy, but not enlarged as much as one would expect in a pregnancy of so long continuance as the history indicates, a presumptive diagnosis of tubal pregnancy is warranted, and the matter of operation should be considered. To render the early diagnosis of ectopic pregnancy possible, it is necessary for physicians to learn to suspect it and to examine patients with that suspicion in mind.

Dr. Charles A. L. Reed said that to make a diagnosis of tubal pregnancy before the time of rupture it is necessary to have the patient under observation constantly for a considerable length of time. He had encountered such a case about seven years ago, the details of which were narrated. Dr. L. H. Laidley said the only diagnosis of ectopic pregnancy he had ever made was in a case of cancer of the uterus where there was no rupture. He did not suspect the existence of the condition until he had removed the tubes and had found indications of a developing fetus within the tubes. Dr. Zimke of Cincinnati thinks the diagnosis of ectopic gestation is easy in some cases if the gynecologist has certain symptoms to guide him, namely, loss of blood, either scanty or profuse, attended with pain, and a tumor, pulsating in character, found on one or the other side of the uterus. In other instances, however, the diagnosis is very obscure, particularly in those cases in which the ectopic gestation is complicated with a normal pregnancy. Such a case was narrated. Dr. D. Tod Gilliam said that if the gynecologist could diagnosticate most cases of ectopic gestation before rupture has taken place it would prove a great boon to womankind. A distinction between tubal pregnancy and inflammatory conditions should always be borne in mind. Dr. J. Henry Carstens does not think cases of extra-uterine pregnancy are as common as the profession generally supposes. The average general practitioner with a good practice observes but very few cases in a lifetime. He spoke of the difficulty in diagnosis, and said that often when this condition is expected and operated for, something else is found.

Surgical Treatment of Uterine Displacements.—Dr. Charles A. L. Reed of Cincinnati, Ohio, read this paper. Attention was called to a couple of modifications of technic in the management of a class of cases that is happily becoming less and less perplexing. In a majority of all cases of retrodisplacements that demand operation at all, the author believes that the intraperitoneal shortening of the round ligaments is the operation of choice. It has been his habit during a number of years to effect this by making a letter-of-S fold in the ligaments and stretching them thus folded to the parietal peritoneum along the line of Poupart's ligament. This method has yielded him better results than any which he has previously tried. He has, however, become convinced that the parietal fixation of the folded ligament is not necessary for the purpose of holding the uterus in its normal position, and that the technic devised by Mann, with modifications, is all that is required to accomplish this object. Such modifications are: In seizing the round ligament with hemostatic forceps for the purpose of folding it upon itself, the tissues are frequently wounded. The use of two hemostatic forceps for the purpose of effecting the fold makes the services of two hands of an assistant necessary. To obviate these objections, which, although of minor importance, are still objections, I have devised a forceps with four flat approximating prongs, the whole being an inch across. The prongs of the opposing blades approximate with sufficient force to hold the ligament, but not enough to induce tissue necrosis, while, when approximated, they are far enough apart to permit the passage of a medium-sized needle between them. The ligament brought up into the field of operation on the finger is seized in its middle third by this instrument, which is then turned half-way around, thus effecting by a simple twist of the wrist the desired shortening of the ligament. It is then held in this position until all of the sutures are applied. These are inserted as follows: One is interrupted, one fixes the loop of ligament to the cornu of the uterus; a similar suture is utilized to fix the outer fold of the ligament; a continuous suture is then passed between the prongs of the fixation forceps, its ends being obliquely tied after the instrument is withdrawn.

A pathological condition that often exists in cases of long-standing flexions, and the persistence of which militates against the success of any fixation operation, consists in an atrophy of the concave wall and a hypertrophy of the convex wall at the point of flexure. In many of these cases, particularly when associated with diffuse fibrosis, the elongated and hypertrophied wall offers a persistent resistance to the maintenance of the normal axis of the organ. To overcome this I have, for some time, removed a cuneiform segment from the hypertrophied wall, an operation which Thiriar calls cuneohysterectomy, and which is applicable in either anterior or posterior flexions. To do this the patient is placed in the Trendelenburg position. All adhesions between the uterus and bladder, or between the uterus and other organs, are carefully broken up and rents in the serosa that may be induced thereby being carefully stitched. The uterus is then brought toward the incision by gentle but firm traction, and an ellipse of tissue about one centimeter wide and having a length corresponding to the breadth of the organ is removed from the convex side at the site of flexure. Care must be taken not to carry this dissection into the cavity of the uterus nor to wound either the circular artery or the anastomosing branches of the uterine artery. Should the latter accident occur, it is best controlled by *en masse* ligatures, passed deeply into the uterine tissue at either end of the yet

gaping ellipse. Retraction of the vessels generally prevents their isolation and closure by direct ligature which, when practicable, is always the preferable method. After all hemorrhage, except mere capillary oozing, is controlled, the margins of the ellipse should be carefully approximated and closed by a continuous animal suture passed deep into the matrix. It may be well to fortify the continuous suture with two or three interrupted ones of the same material. The uterus is then dropped back and after pausing a moment to make sure of complete hemostasis, the abdomen is closed without drainage.

Fibroma of the Ovary.—Dr. L. H. Laidley of St. Louis, Missouri, reported the following case: Mrs. H., aged twenty-nine years, married, usually enjoyed good health with the exception of almost complete deafness due to a specific disease for which she was treated some fifteen years ago. She became pregnant and was delivered of a healthy child about two months before the removal of the tumor. She had noticed a tumor in the region of the left ovary about two years ago, hard and slightly movable, which continued to grow to the size of two fists. In the development of pregnancy it was pressed upward on a line with the umbilicus and could readily be felt in her left side. There was no pain nor discomfort up to the tenth day after her delivery. She had a favorable "getting-up," but on the fifteenth day she had fever with pains, causing her to again take to her bed. These continued until the speaker saw her two months later. Upon examination he found the lungs, heart and abdominal viscera in normal condition. There could be readily felt and seen a hard, immovable tumor in the left umbilical region, with considerable ascitic fluid in the cavity. On January 20th an abdominal section was made, revealing a solid tumor adherent to the anterior wall of the abdomen. Posteriorly the folds of the bowel were adherent to that portion, the tumor was freed. It was kidney-shaped, hard, with short pedicle, one inch in diameter by two inches in length; this was ligated and the tumor removed. In tying the ligature it readily cut through its peritoneal covering, but secured the stump from hemorrhage. On examining the remaining organs, it was found that the stump of the pedicle occupied the location of the ovary; the tube remained distinct and separate from the tumor; the opposite side showed a healthy tube and ovary; there was considerable hemorrhage from the surface bleeding following the operation, but with that exception there was no difficulty encountered. The patient made an uninterrupted recovery. The tumor weighed 32 ounces and measured 6x5x3 inches. A histological report accompanied the recital of the case.

Diffuse Non-Malignant Papilloma of Vulva.—Dr. Edward J. Ill of Newark, New Jersey, read this paper and showed a specimen which he removed from a patient, sixty-eight years of age. The growth had been of over three years' standing. The inner surfaces of the vulva were thickened, at some places appearing horn-like, white and smooth; at other places there were heavy papillæ which rose considerably above the surrounding tissue and were from 3 mm. to 15 mm. in diameter at their base. The disease extended from the beginning of the vulva above down to the posterior commissure. It covered the whole vestibule except the tissue immediately surrounding the external meatus of the urethra, and was well defined, but stopped at the vaginal mucous membrane. The vulva as a whole stood out far beyond its normal elevation. The whole vulva was excised. The structure of the tumor corresponds with that usually found in papillomata of the skin. A second case was spoken of by the writer.

President's Address.—This was delivered by Dr. Rufus B. Hall of Cincinnati, who selected for his subject, "The Education of the Laity Upon Sexual Matters; When Shall They Be Taught and to What Extent?" The family physician should be the educator of the people in sexual matters, and when he gets the endorsement, and is sustained in his position by the specialist, his influence will be greatly strengthened and widened. He advises that during the last year in High School, in every school in the land, a text-book be employed embracing embryology, hygiene, anatomy and physiology, including sexual physiology, and that these subjects be taught to every student, both male and female. A female teacher should instruct the girls, and a male teacher the boys. This is the very time in life when individuals should be taught to know the functions with which Providence has endowed them, and how to care for their bodies as well as their minds. It would be a revelation to them to know that the sexual organs, in animals as well as the human race, are among the first centers to be formed and can be recognized as such early in intra-uterine life.

Private Hospitals and Their Management.—This was the title of a paper by Dr. Joseph Price of Philadelphia. The well-organized private hospital, managed by such distinguished men as Marion Sims, T. G. Thomas, Thomas Addis Emmet, William Goodell, Stone of New Orleans, and a few institutions of the present time doing the best work offer advantages that are not given by the schools or the political hospitals. The political hospital is not the only corrupt institution; a few of the well-endowed general hospitals, managed and handed down in families, to the third, fourth and even the fifth generations, are the most dangerous institutions in the medical profession. It is always a misfortune to an endowed charity or public hospital for a family to be in full possession of the funds or endowments. No one, to the speaker's personal knowledge, has ever made money and accumulated wealth out of a private sanitarium. He may make money out of the fees, but never out of the board, care and nursing of patients. The board of patients rarely pays 5 per cent. on the money invested. A good number of these institutions

have been financial failures and have closed. Private hospitals give the operator the best opportunity for doing good work.

Postrectal or Presaeral Growths.—Dr. James F. W. Ross of Toronto reported four cases of postrectal tumors, excepting the osteomata. He discussed benign and malignant growths in this region; also their etiology, symptomatology, diagnosis, prognosis, and treatment. No novice should undertake the removal of postrectal growth. It can only be done by one who has become familiar with pelvic surgery, and who is fully master of the situation. The operator must be full of resource and should be rapid in his movements. In making his incision into the abdominal wall, he should always remember that it should be made high up and enlarged downward after the position of the bladder has been ascertained. The author has had no experience with the removal of such postrectal growths by enucleation from above. He is well aware that many thoughtful, prudent and daring surgeons do not hesitate to close the abdomen when this condition is met with. What should the technic of such an operation be? Should the meso-rectum be incised close to or far away from the bowel? Should not the incision always be parallel to the vessels and not across them? How is the surgeon to accurately determine the situation of the ureter and, when discovered, how can he avoid it? How can he best guard against injury to the large vessels? In dealing with bronchial cysts in the neck the speaker has followed them almost to the spine, but has then left the deep portion of the cyst-wall, if it could be called a wall. It seems to him that he would have been forced to deal with the last case he reported of presacral cyst in exactly the same manner because the periosteum and so-called cyst-wall were so intimately connected. It would not be wise to drain such a cavity into the peritoneal cavity, but would be more prudent to attack such cysts through the post-anal tissues, perhaps with the removal of the coccyx. The solid tumors should always be attacked from the front.

Third Day—September 20th.

The Ligature and Dry Sterilized Catgut.—This was the title of a paper read by Dr. J. Henry Carstens of Detroit, Mich. The author described a modification of the Boeckman method of preparing catgut. The ligatures are prepared in the following manner: Catgut is put in ether for a few days or a week until the fat is all removed, and then cut in strips eighteen or twenty inches long. Three of these are wrapped in fine tissue paper and then placed in a small envelope. The latter is closed, and placed in a Boeckman sterilizer and subjected to dry heat for three hours. A thermometer is kept in the apparatus and the heat is kept at least 300° F. At the expiration of that time the heat is shut off, and the ligatures remain in the sterilizer without disturbance for twelve to eighteen hours, which gives any spores that may be present an opportunity to develop. The heat is again used and the ligatures are subjected to another 300° F. They are now sterile. They are put in an envelope and can be carried that way in a satchel. When ready for use the end of the envelope can be torn off and the ligature, with the tissue paper, dropped into alcohol, the tissue paper removed, and the ligature threaded and used. These ligatures are not slippery or greasy, as is the catgut prepared with different oils. The following points were emphasized: All buried sutures ought to be absorbable and absolutely sterile. Chromicized sutures are no more sterile than plain sutures. A chromicized suture is harder and remains longer in the tissues. This latter is a disadvantage. If in a special case it is desirable that a suture should remain long, dry sterilized kangaroo-tendon can be used.

Simple Methods in Pelvic Surgery.—Dr. John B. Deaver of Philadelphia read a paper with this title. Simplicity is the *sine qua non* of good surgery. It means safety, surety, confidence, neatness, and a great saving of time which is an essential factor in the success of many operations. The abdominal route is by far the more rational and therefore the best method of approaching an operation on the pelvic organs in the majority of cases, and offers several advantages that render it preferable to the vaginal. It is simpler of performance. It is safer, as the surgeon can avoid distributing infection where infected areas are present. It reduces the danger of general peritonitis by the use of gauze packing. It renders injuries to the bowel, ureters, important blood-vessels, etc., less likely. It minimizes the danger of hemorrhage. It aids generally by the facility offered for inspection. Through the abdominal incision the surgeon is able to open the belly to the proximal side of the infected area, when, by the proper disposition of sterile gauze sheets, practically all risk of peritoneal contamination is done away with. It enables the surgeon to operate with a very few instruments. Radical operations per vaginam are, with few exceptions, the author thinks, to be discountenanced, for several good and sound reasons: (1) The limited area for manipulation. (2) The impossibility of inspection without destruction and removal of the uterus, which should not be removed except for good and sufficient disease of that organ itself. (3) The marked increased liability to hemorrhage, both primary and secondary. (4) Increased danger of injuring ureters, bowel, bladder, and large blood-vessels. (5) Danger of doing incomplete surgery. (6) Inability to repair satisfactorily injuries to bowel or bladder, etc. (7) Inability to deal safely with an inflammatory mass which involves the vermiform appendix.

Fibroids in the Non-Pregnant Uterus.—A paper on this subject was read by Dr. E. F. Fish of Milwaukee, Wisconsin. The author discussed the advisability of operating in all cases of fibroids of the uterus as soon as discovered and leaves it

an open question. He emphasizes the necessity of radical interference whenever the tumor or tumors are productive of symptoms—pain, hemorrhage, pressure, constitutional impairment—unless there be existing disease, such as nephritis, diabetes, tuberculosis, etc. Of radical treatment, he thinks that myomectomy is the operation of choice, whether subserous, interstitial, or subcutaneous, if it is single and can be enucleated without loss of tissue and the cavity closed and covered with peritoneum. Where several tumors exist, the judgment of the operator comes into play. Many nodules mean many foci, and the author opposes myomectomy on the ground that some of these may not be discovered and later develop and demand another operation. He thinks, too, that under such circumstances the condition is a general one extending to the tubes and ovaries, and this condition might, and likely would, call for future operation. The vaginal route is favored for small tumors, the abdominal for large ones. Hysterectomy is favored when the tumor involves so much uterine tissue that a proper closing of the tumor cavity is not possible, when the organ is studded with small tumors or nodes, when there is coexisting pelvic disease, when the growth is degenerating, when there are adhesions, when the tubes and ovaries are involved to such an extent that they must be sacrificed, when the disease is no longer local, when the change of life has occurred. He favors supravaginal amputation, leaving the cervix when sound, and panhysterectomy when the cervix is lacerated or diseased. He leaves the ovaries if sound, or if only one is sound he leaves that, or if only part of one he leaves that. He believes in ignipuncture for small pea-like cysts and leaves the ovary. He is convinced that it modifies the nervous symptoms which usually follow complete removal. Palliative treatment is discussed, the author paying most attention to curettage and electricity, and he briefly touches on salpingo-oophorectomy, ligation of the uterine artery, organopathy, medical treatment, and natural cures. He concludes that myomectomy is the operation of choice, (1) when the tumor is pedunculated; (2) when single, whether subserous, interstitial, or subcutaneous, and can be enucleated without loss of uterine tissue, and the tumor cavity closed and covered with peritoneum; (3) when the desire for an heir outweighs all other considerations. Hysterectomy indicated (1) when the tumor involves so much of the uterus that a cavity too large to be properly closed and covered with peritoneum would follow its removal; (2) where several tumors exist, especially little nodules; (3) when the adnexa are diseased to such an extent that they must be sacrificed; (4) when the disease ceases to be local; (5) when hemorrhage, pressure, or pain is a persistent symptom; (6) whenever malignancy is suspected or the tumor is of rapid growth; (7) after the change of life. Palliative treatment is indicated when the patient is much reduced from loss of blood, as a prelude to rational cure; when the existence of chronic nephritis, diabetes, tuberculosis, or other constitutional disease forbids radical cure; and when the patient is past forty years of age, the tumor small, the main annoyance hemorrhage, and she is desirous of awaiting the effect of the menopause.

Acute Senile Endometritis.—Dr. L. H. Dunning of Indianapolis, Indiana, read a paper with this title, it being the second written by him upon this subject, in which he reaffirms his belief that it is a distinct lesion that has not heretofore been adequately described. Since his previous paper he has encountered three more cases, two of which were attended by sanguineo-purulent discharges from the uterus and one in which there was a large pelvic abscess. The inflammation tends to spread beyond the endometrium into the Fallopian tubes, ovaries and pelvic peritoneum, resulting in much suffering and ill health and not infrequently leading to so serious involvement of these structures as to demand operative procedures, such as extirpation of the uterus and appendages, or vaginal incision and drainage of a pelvic abscess. The chief cause of the lesion is infection. It is not definitely self-limited, but tends to become chronic and to lead to marked degenerative changes within the uterus. The treatment recommended is, in cases where the appendages are not involved, dilatation, curettage, the application of a mild caustic and prolonged drainage. When the uterine appendages are involved in the inflammatory process, extirpation of the uterus and appendages is advocated.

Tubo-Ovarian Abscess.—A paper on this subject was read by Dr. Edwin Ricketts of Cincinnati, Ohio. Tubo-ovarian abscess is frequently caused by the proximity of the ovary to an infected Fallopian tube. The disease may be complicated by normal or ectopic pregnancy, intestinal, vaginal or vesical fistulæ, and by appendicitis. In the dormant stage the author operates by the abdominal route; in the acute stage he explores by the abdominal route, and then decides between completing the operation in one or two sittings. Following abortion or delivery at full term, vaginal drainage in his opinion often puts the patient in better shape for an abdominal section later on.

Malignant Disease of the Pelvic Organs.—This paper was read by Augustus P. Clarke of Cambridge, Massachusetts. Cancer may have its starting point in a lacerated cervix uteri; but its seat of development is usually in the epithelium. Its occurrence not infrequently takes place after the patient has become a multipara and before she has become of advanced age. The exposure of the mucous membrane to continued or repeated irritation hastens its onset. Cancer of the uterine body has had its origin from endometritis and from its allied conditions. The disease may be induced or intensified by inflammation of the utricular glands

of the uterus and by the effects of external pressure. A sarcomatous condition may result from the same cause. Cancer of the broad ligament, as also that of the ureter, has been observed as the result of extension from the uterine cervix. The meatus urinarius has been noticed as an original seat of cancer. In such cases vesical and urethral disturbances have been known to antedate the appearance of the malignant change. Cancer of the ovary, or of other portions of the adnexa, may occur as secondary to a primary point of invasion. The route of transmission is usually along the course of neighboring lymphatics, or along the epithelial cells of the ducts of such open channels of communication. The fact that cancer cells may so readily invade the epithelium of newly-formed growths containing endothelium shows the importance of taking measures for their early removal before degenerative changes have extensively occurred. The morbid development undoubtedly arises at times by abnormal proliferation of the epithelium from its basic point of origin to the deeper structures within. The majority of cases of cancer occurring in the bladder are secondary to involvement of the cervical portion of the uterus. The cases which call for special consideration are those of the villous type. Curettement and the employment of the galvanocautery afford the best means of relief. In those cases of rectal cancer in which the sphincter ani is not invaded, excision of a portion of the rectum and the removal of the coccyx and the lower section of the sacrum can sometimes be advantageously done. The use of the Murphy button in such cases is of service. The only effectual radical method of treatment is by excision. Partial removal of the uterus on account of extensive invasion by malignant disease will not suffice. The fact that uterine or pelvic fibroids and fibromyomata may take on malignant transformation is becoming more and more recognized. The necessity of watching closely for changes that may be assured becomes obvious. Both round and spindle-celled sarcoma may originate in benign fibroids. The total excision of such neoplasms in their earliest stages will afford the most satisfactory results.

Difficult and Obscure Pus Cases.—Walter B. Chase of Brooklyn read a paper on this subject. The author first considers the etiology of these cases, classing gonorrhea as the most frequent cause, closely followed by miscarriage and labor at full term, these usually following some infection from without. Among the causes from within are considered those following the rupture of an ectopic tubal pregnancy, hematoma, malignant or tuberculous disease, and others less frequent in occurrence.

The question of time should be considered in the diagnosis, but the great mainstay is thorough and systematic bimanual and rectal examination. The author calls attention to the fact that fluctuation may be due to cystic growths, recent hematomata, amyloid degeneration, etc., as well as pus. Pain and fever, or their absence, go far to clear up diagnosis in many a case, but the fever due to malignancy must not be confused with that due to septic causes. Appendicitis and pus tubes may cause difficulty in differentiation. The rule that pus in the pelvic cavity must be evacuated is general, although not universal. The manner and route of its evacuation are thoroughly discussed. Drainage is next considered, the author taking up the direction and the material, usually preferring plain or iodoform gauze, and at the same time considering irrigation, for which he generally uses normal salt solution. Multiple abscesses are considered next with their management. The serious cases in which pus exists free in the pelvic cavity are taken up, and among other things he states that sentiment should be allowed no weight in their treatment. Another embarrassment to the operator is the failure of the public to discriminate as to the cause of fatality, in many of which cases the operator has nothing to do with the mortality. In closing, he cites several pertinent cases, in one of which two abscesses were caused by the escape of the bacillus coli communis, evidently from a denuded spot on the serous covering of the bowel.

HARVARD MEDICAL SOCIETY.

Stated Meeting, Held April 28, 1900.

The President, John B. Walker, M.D., in the Chair.

Cholecystectomy for Gall-Stones.—Dr. Charles L. Gibson read a paper on this subject. He said that it is not very long ago since the first successful removal of the gall-bladder for cholelitheasis was reported. The operation appeared to be too radical and it was long before even simpler operations upon the gall-bladder seemed justifiable to the surgical mind. The original habitat of cholecystectomy was Germany and it is only there that the operation has been tried to any serious extent. English surgeons have not taken to it and the French have practised it very little. Here in America we have been almost as conservative as the English surgeons. The records of the New York Surgical Society contain but two cases of extirpation of the gall-bladder. There is no doubt, however, that this operation has a great future before it and a wide sphere of usefulness. Time was when surgeons considered it sufficient to incise and drain the abscess that occurred in appendicitis. It was years before the thought of the radical removal of the appendix for all of these cases finally asserted itself. The same thing will undoubtedly take place with regard to operations upon the gall-bladder. Cholecystotomy will in many selected cases undoubtedly be replaced by cholecystectomy. Dr. Gibson has had two cases differing very widely in the symptoms they presented and

in the condition which existed at the time of the operation for which he has deemed it advisable to do cholecystectomy.

Cholithiasis Simulating Appendicitis. — Dr. Gibson's first case was a young woman of twenty-two on whom double oophorectomy had been done some time before. She was suddenly attacked with pain in the right side and back accompanied by a chill and a temperature that ran up to 103° F. and a pulse of 120. The right half of the abdomen was extremely tender and the muscles rigid and board-like. The seat of the pain was not very well defined and seemed to occupy rather the lower than the upper half of the abdomen. The diagnosis of the case at first was appendicitis. The very short history, however, seemed to contradict this unless it were an appendicial inflammation of a very virulent character. There was no history that would point to the presence of gall-stones, although the patient thought that she had at times been bilious. The incision in the abdominal wall was made midway between the cecum and the gall-bladder. A large, elongated gall-bladder sausage-like in appearance, parallel to, but not projecting below, the liver was found. It was full of biliary calculi. By gentle, blunt dissection it was easy to free it from all adhesions and its removal was decided upon. The duct was closed by a suture and the lower angle of the wound in the abdominal wall was left open for drainage. At the end of twenty-four hours the temperature reached 105° F. as the result of reaction after the operation. It was feared that some leakage of bile into the abdominal cavity had occurred. The temperature came down, however, and did not rise again. Drainage was removed on the third day and firm union took place within the month. No further complications were noted.

Fatal Capillary Oozing.—The second case was a patient who for five months had suffered a great deal with pain in the region of the liver. This was the characteristic sharp, lancinating pain of biliary calculus. Marked jaundice developed and clay-colored stools were noted with the symptoms of disturbed nutrition which signify an occlusion of the bile-duct. She lost sixty pounds in weight. The jaundice became of a deep yellow and ecchymoses and petechiæ hemorrhagicæ occurred in the skin and mucous membrane. A six-inch incision parallel to the edge of the ribs was made and the gall-bladder was found hard and contracted to the size of a crab-apple. Drainage was extremely difficult because of the extent of the adhesions and the depth to which it had to be carried from the skin surface. The patient did not rally well. After the dressing there was a good deal of oozing and some bile was also discharged. The patient's general weakness increased very much and became so marked that it was feared that internal bleeding was causing exhaustion. On the second day the wound was reopened and an enormous hematoma was found and was turned out. Despite packing, however, the oozing continued. No large vessels were bleeding, but there was the capillary oozing so characteristic of advanced icterus. Death took place one hour after the reopening of the wound for the purpose of controlling the hemorrhage.

Conclusions.—The first case shows that the radical operation of removing the gall-bladder obviates the use of long-continued drainage and also the possibility of a persistent biliary fistula. That this second danger is no unfounded dread, any one who knows the number of persistent biliary fistulæ that exist will understand. The second case shows the utter inadvisability of allowing cases of biliary trouble to go on for long periods, and on the other hand emphasizes the inadvisability of operating on weakened patients in whom icterus has existed for a long time. The radical removal of the gall-bladder restores the liver secretion to the intestine and reestablishes the physiology of intestinal digestion. This shortens very much the convalescence of these cases. As a rule the gall-bladder is easier to get out than a pus-tube. Cholecystectomy assures the radical cure. In this respect it is much more certain than cholecystotomy. If biliary symptoms were not allowed to continue for long periods of time before being referred to the surgeon the formation of adhesions and the spread of the inflammatory condition would be greatly lessened. This would facilitate the operation of cholecystectomy very much. The removal of the gall-bladder is not the operation of choice for every case. It is not meant to be adopted as a routine measure. It is for selected cases. Cholecystotomy is followed by recurrence in about six per cent. of all cases in which it is performed. Kehr, whose large experience in biliary surgery makes his opinion of great value, does not consider cholecystotomy in any sense a radical operation. It requires more skill to do a cholecystectomy, but the greater the experience in biliary surgery the more often is it done, because of the freedom from relapse guaranteed. The operation need not necessarily be a long one in uncomplicated cases. It has been done in less than fifteen minutes from the time of the incision until the suturing is done. The mortality of the operation is higher than that of cholecystotomy, but is not forbidding. It should be carefully ascertained that all the ducts are free before the operation is undertaken. It has been objected that with the gall-bladder removed if trouble should ever occur in the bile-ducts afterward there would be no guide to their position. The objection, however, seems far-fetched.

Comparative Anatomy of Gall-Bladder.—It has been objected that the operation of cholecystectomy removes an organ that has a certain rôle of usefulness in the body. As a matter of fact, however, the gall-bladder is of very little value. The comparative anatomy of the gall-bladder makes it appear almost a joke to insist on the usefulness of this organ. Some animals possess it, some not, and there seems no special difference in the digestive functions of the two classes.

That the gall-bladder acts as a reservoir for bile secreted during the intervals of digestion is a fairy story that has been exploded for a long time. Normally it holds less than an ounce while the system secretes and consumes from twenty to thirty ounces a day. The storage capacity of a reservoir which holds less than an ounce would be totally inadequate.

Danger of Malignancy.—There is no doubt now that chronic irritation may produce malignancy. It is worth while, therefore, for purposes of prophylaxis for cancer to remove a gall-bladder that has been suffering for a long time from chronic irritation because of the presence of biliary calculi. Cancer of the gall-bladder is not an infrequent condition. Where no gall-stones have existed, however, it is extremely rare. The removal of a calculous gall-bladder is now recognized as a most fruitful cancer prophylactic. Ideal cholecystotomy, that is, an incision made into the gall-bladder followed by the removal of gall-stones and then by immediate suture of gall-bladder and of the abdominal incision, would seem to be a most desirable operation. It is not, however, feasible in most cases. The presence of stones in the gall-bladder has practically always led to infection. The contents of the gall-bladder when calculi exist are never sterile. Therefore closing up a gall-bladder after the removal of gall-stones is like closing up an abscess after the fluid purulent contents have been removed. Ideal cholecystotomy has been accomplished successfully but only under very exceptional circumstances. It always has a large element of danger in it and in most cases the incision will have to be opened again and the gall-bladder and its neighborhood thoroughly drained.

Cholecystotomy and Drainage.—In the discussion Dr. Howard Lilienthal said that chloecystotomy need not necessarily be followed by long drainage. This is often presented as an objection to the operation, but it can be avoided by proper technic. If the cut edges of the gall-bladder are inverted so that the peritoneal surfaces come together and a drainage-tube inserted at one angle of the wound, the opening will close usually in twenty-four hours. This method was discovered by a western surgeon and has been used in a number of cases by Dr. McBurney with marked success. As an alternative to cholecystotomy it must not be forgotten that cholecystenterostomy can be employed. Modern surgery is, however, advancing in the line of radical rather than palliative operations. Cholecystectomy is undoubtedly one of the radical operations that will commend itself to surgeons in the near future. It must be borne in mind that an absolute contraindication to the performance of cholecystectomy is the presence of an obstruction in the common bile-duct. That the common bile-duct is free must be definitely ascertained before any attempt is made to remove the gall-bladder. The objection offered, that after the removal of the gall-bladder it would be difficult to locate the common biliary duct, should further trouble occur there, seems trivial. Anatomical relations make it possible to find the duct, although the difficulty of doing so may be considerably increased with the gall-bladder absent.

Complete Operation.—Dr. Brewer said that surgeons are abandoning incomplete for complete operations in many lines of surgical work. This is typically true of appendicitis. It is easy to see that the chronic inflammatory condition of the gall-bladder is an analogous condition to chronic inflammation of the appendix. Both of them occur in hollow organs in connection with the intestinal canal, both are liable to infection and neither show any marked tendency to spontaneous cure. Appendectomy has come to stay; cholecystectomy has surely a bright future. In old cases it is not devoid of danger. Adhesions may make the removal of the gall-bladder a very serious operation. It will always have a larger mortality than cholecystotomy, but the advantage that it practically guarantees against recurrence seems to be enough to offset this objection.

Absence of Gall-Bladder.—Dr. Brewer has seen two cases, one of them in the dissecting-room, in which the gall-bladder was absent. In one case the patient was supposed to be suffering from cholecystitis. An incision was made over the usual location of the gall-bladder, but none could be found. For an hour careful search was made without success. As complete absence of the gall-bladder is a very infrequent anomaly, it was supposed that the gall-bladder in this case was buried in the hepatic tissues and so escaped discovery. At the autopsy, however, it was found that no gall-bladder was present. What had been supposed to be the cystic duct was really a branch of the hepatic duct entering another portion of the liver. The symptoms had been occasioned by inflammatory adhesions surrounding the biliary duct. These adhesions were due to a perforating ulcer of the stomach on the lesser curvature not far from the pylorus.

Dr. Foote said that operations for pathological conditions of the biliary tracts are often very complicated. Seldom do two cases occur that present similar conditions. There is much more difference between successive cases than is encountered in appendectomy. The anatomy of biliary region is much more complicated than that of the cecum and the appendix. It is extremely inadvisable to allow biliary conditions to recur and grow worse with each recurrence. Adhesions form, the normal anatomy and its landmarks become obliterated, until finally operation becomes a very difficult matter. Dr. McCosh says that the great bother with operations upon the gall-passages at the present moment is that medical men refuse to counsel operation until the patient has suffered for months, is so weakened by jaundice that a severe blood dyscrasia sets in and then the patient dies of post-operative capillary hemorrhage in spite of the most careful precautions on the part of the surgeon.

Dr. John B. Walker said that undoubtedly the

greatest danger in operations upon the biliary tract where jaundice has existed for some time is uncontrollable capillary hemorrhage. He recently saw a death from this cause in a man of sixty where nothing would stop the bleeding. Operations upon the gall-passages must not be looked upon as a last resort, but rather as something to be thought of as soon as pronounced symptoms of the presence of a calculus or some other pathological condition of the biliary tract become clear. There is very little hope of spontaneous recovery once an undoubted attack has taken place. Recurrent attacks lead to the formation of dense adhesions that greatly obscure the field of operation.

A Surgical Operation.—Dr. Brewer said that in operating in private houses he has often found it difficult to be assured of having at hand the dressings and bandages needed for various operations. Because of this he has a package made up, all of the material in which can be thoroughly sterilized beforehand. This can be carried to the place of operation when needed and the surgeon will always be sure of having just what he wants. Besides gauze, this package contains materials for rubber drains such as Morris uses, a rubber head-apron, to surround the field of operation, cover the hair and the ether apparatus in operations upon the head, and a round rubber band, about two feet long and over a half inch in diameter, which can be used to compress the blood-vessels in the extremities. Dr. Brewer also presented some gloves which had recently been prepared for him. They are of good, thin rubber, durable, not too slippery when wet, stand washing well and may be put on easily.

Dr. Howard Lilienthal considers that a mouth-mask of gauze is of more importance than the use of gloves for the hands. The hands may be cleansed with reasonable thoroughness. It is impossible, however, to prevent small particles of saliva from the always infected mouth from being carried out into the air above an operation wound, especially if the operator talks during the operation. Experiment has shown that even when people are most careful, impalpable and invisible particles of saliva from the mouth find their way out during the talk. It is a common experience with all of us that there are people, and some of them are surgeons, from whose mouth the particles that proceed cannot exactly be said to be impalpable and invisible. Three or four thicknesses of gauze over the mouth are sufficient to prevent this. It has often been shown that conversation of any kind carried on over a culture medium is followed by the growth of micro-organisms. Expiration through the nose has not this effect. The apparatus in the nose which protects us from carrying bacteria into the lungs also prevents us to a large extent from expelling bacteria with the expired breath. While the operator may remove his operating-gloves for purposes of palpation, the mouth-mask should not be removed and conversation should be limited as much as possible. Needless to say a turban should be worn over the hair during operation. There is no doubt that results are much better in the hands of those who carry out carefully these protective precautions. Besides, the surgeon's conscience is better should anything untoward happen, since he has the assurance that every possible precaution was taken.

Dr. Walker said that the results in operations for hernia, for instance, are much better since the introduction of gloves. This is not only the common impression among surgeons who use gloves, but it is an actual deduction from statistics. Not only is there a distinct decrease in the mortality, but the morbidity has been very much lowered. At Johns Hopkins Hospital, for example, in about ten per cent. of the cases before the introduction of gloves some morbid symptoms developed that pointed to an infection with pus micro-organisms, though usually not of a serious nature. In recent cases, however, there have been such symptoms in only about one per cent. It seems evident, therefore, that the mouth-mask while adding a good deal to the inconvenience of the operator will not improve his results very much. Gloves have, however, proved beyond all doubt their right to a place in the domain of surgery. They have surely come to stay.

NEW YORK COUNTY MEDICAL SOCIETY.

Stated Meeting, Held April 23, 1900.

The Vice-President, J. Clifton Edgar, M.D. in the Chair.

Tetanus, Its Nature.—Dr. Alexis V. Moschcowitz said the scientific study of tetanus began with Nicolaier's discovery of the bacillus of tetanus in 1884. Kitasato obtained the bacillus tetanus in pure culture in 1891. Before that time the most varied theories existed with regard to the causes of tetanus. Some of the adjectives which still remain as descriptive terms for the various forms of tetanus are derived from these theories. Rheumatic tetanus of course is a misnomer and idiopathic tetanus only has an existence in the minds of those who, having sought too perfunctorily for the site of inoculation of the disease and not found it, consider therefore that somehow it originates of itself. Such slight wounds as that of a hypodermic needle or the sting of a bee are sufficient to convey the disease. There seems to be no reason to doubt that inoculation may sometimes take place through mucous membrane, especially where excoriations exist. Not only the mucous membrane of the gastrointestinal tract but also that of the respiratory tract is liable to be the avenue of entrance. The tetanus bacillus multiplies only at the point of infection. It does not find it way by metastases through the system. During its growth at the point of inoculation toxins of an intensely virulent character are produced

and their absorption causes the symptoms of tetanus. The division of tetanus into forms is justified by the train of symptoms that always occur in them. Cephalic tetanus from a wound on the head always develops its symptoms in the region supplied by the facial nerve on the same side as the wound through which inoculation took place. Puerperal tetanus is always due to an inoculation in the genital region. Widal and Chantemesse have obtained the bacillus tetanus in pure culture from the vagina. Curiously enough the first symptoms of the disease are noticed in the neck and face muscles and not in the abdomen. Trismus is usually the preliminary sign. Tetanus neonatorum is always due to an infection of the umbilicus of the newly-born with the tetanus bacillus. The first symptom is the failure of the child to nurse. As in the case of the puerperal woman it is trismus that opens the scene.

Pathology.—The pathology of the disease, notwithstanding all the investigations that have been made on the subject, remains as yet indefinite. Many peripheral and central nerve-changes have been described in addition to pathological appearances in the sympathetic, but none of them are sufficiently uniform to be set down as the absolute characteristic of the disease. The most uniform pathological condition noted is a hyperemia of the nerve-centers. An important fact with regard to the central nervous system is that the normal brain and cord substance is somewhat antitoxic, that is, is capable of neutralizing to a certain extent tetanus toxins. On the other hand it is in the cerebrospinal fluid that the most virulent toxin of the disease is found. Stintzing showed that the cerebrospinal fluid of patients attacked with tetanus when injected into mice caused attacks of the disease. The results obtained were not, however, absolutely uniform. There was a very early and a delayed effect from the injection. In some animals the disease developed in from two to three days, while in others it was later than the tenth day and even as late as the twenty-sixth day. The toxins formed at the point of inoculation seem to find their way into the central nervous system through the perineurium of the nerves. Its main point of attack in the spinal cord is the large cells of the anterior horns.

Prognosis.—This depends upon two things. First, the length of incubation of the disease, and, secondly, upon the acuity of the affection. The mortality of the disease is variously reported. As high as 96 per cent. is claimed by one observer. The average mortality twenty years ago was about 60 per cent. During the last ten years the average mortality has been 40 per cent., although one Italian physician claims that only 20 per cent. of his cases died. Dr. Moschcowitz has collected the statistics of 290 cases treated with antitoxin by the subcutaneous method. Of these 117 died. During the past year or two, since the publication of Roux and Borrell's observations upon the effect of antitoxin injected directly into the brain of tetanized animals, a number of cases of tetanus in the human being have been treated by intracerebral injections. Dr. Moschcowitz has been able to collect 48 of these. All of them were of the very severest type and were practically hopeless when the injections were made. A little over 50 per cent. of them recovered.

Treatment.—The indications for treatment may be ranged under the following heads: (1) Destroy the bacteria present and prevent the further absorption of toxins. (2) Eliminate as far as possible all toxins that have been absorbed. (3) Failing to eliminate, neutralize the toxins already present in the circulation. (4) Anticipate the symptoms of the disease and its development by immunizing patients before the disease develops. (5) Overcome the symptoms of the disease by the administration of remedies that promise to have an opposite effect upon the organism.

In answer to the first indication the wound of entrance should be promptly enlarged; any foreign bodies or dirt that may be therein should be thoroughly removed so as to get rid of all the infectious material. The most fertile source of tetanus in our large cities is the toy pistol. It is often surprising to find that doctors have permitted portions of the wad of a blank cartridge to remain in the wound for days. Thorough disinfection of the tissues should then be accomplished. For this bichloride solution, 1-1000, or ½ per cent. hydrochloric-acid solution, ½ per cent., or peroxide of hydrogen, or a reasonable strong solution of silver nitrate should be used.

For purposes of elimination it seems worth while to produce prompt catharsis and diuresis. Diaphoresis will also aid in eliminating the toxin, but there is usually no necessity for artificially aiding this function as it is excited by the presence of the toxins of the disease. In the same line of elimination venesection may be employed. As much normal salt solution should be introduced beneath the skin as there is blood removed.

The third indication, the neutralization of the toxins, is accomplished by antitoxic treatment. Unfortunately, before symptoms of tetanus announce themselves, the toxins of the disease have become more or less permanently fixed in the cells of the central nervous system where the antitoxin is unable to affect it. The antitoxin of tetanus is not merely a chemical neutralizer of the toxin, that is, it does not change the toxin to an innocuous substance when mixed with it outside of the body, but is able to produce its effect only when brought into play by the cellular energy of the body tissues.

Immunity can be produced if the antitoxin is given before symptoms of tetanus declare themselves. Unfortunately, we cannot be sure of the cases that are going to develop tetanus or we

would be able to prevent all cases of the disease. When symptoms develop in a tetanic patient, this is not the beginning of the tetanus, but, as has been well said, is the beginning of death from tetanus. The antitoxin may be given as a prophylactic and it has been used as such in a number of reported cases. This is in fact the most promising field for the use of antitoxin subcutaneously. At the Gebaer Anstalt at Prague an epidemic of puerperal tetanus defied all efforts toward its eradication. It was cut short by the prophylactic administration of tetanus antitoxin to every patient who entered the institution. Since then it has become a routine practice in some institutions where tetanus constituted a certain amount of danger for puerperal patients. The prophylactic injection of tetanus antitoxin has also given excellent satisfaction in veterinary practice.. The subcutaneous injection of antitoxin has undoubtedly lessened the death-rate from the disease. For reasons obvious from what we have said with regard to the fixation of the toxins by the cells of the central nervous system, it often comes too late to do any good. In order to offset this Roux and Borrell suggested as the result of experiments on animals the intracerebral injection of antitoxin. This has been used in a sufficient number of cases now to make it clear that it is of some service, although a definite idea of its value cannot perhaps as yet be given.

As to symptomatic treatment of the convulsions chloral, the bromides, opium, and hyoscyamus should be given. As to other methods of treatment recently prominent, subcutaneous injections of brain substance seem not unworthy of mention. As has been said the cells of the central nervous system seem to contain a certain amount of the substance that is antitoxic for tetanus toxins. It is because of this that the brain injections have been employed. Bacelli's method of injecting large amounts of carbolic acid also seems worthy of mention.

Surgical Prophylaxis and Immunization.—Dr. William H. Park said that the surgical treatment of wounds inflicted on the street should be most careful. When tetanus infection occurs the infected material remains absolutely local and never wanders through the system. If the wounds are thoroughly opened at the beginning the tetanus bacillus will not grow. If even after the development of the first symptoms of tetanus we know where the wound of entrance is, we should open it up to remove the bacilli and prevent the absorption of further toxins. The future of the antitoxic treatment of tetanus seems to lie in its employment for prophylactic purposes. It is very easy to produce immunization. In all the stations for the manufacture of diphtheria antitoxin all of the animals are now immunized against tetanus. Before it became customary to immunize them many were lost from the disease. The New York Board of Health lost six some years ago and then introduced the custom of periodical immunization. Recently because of moving the laboratory this immunization was neglected and a valuable animal was lost shortly afterward. Once the symptoms of tetanus have manifested themselves in an animal the use of antitoxin does not seem to influence the course of the disease.

Immunity for Human Beings.—Tetanus as we see it in the cities is mostly due to injuries inflicted by toy pistols. It would be perfectly justifiable to use antitoxin for prophylactic purposes in these cases. If 2 cc. of tetanus antitoxic serum were injected after every wound inflicted by a blank cartridge tetanus would practically be banished from our cities. The use of the serum subcutaneously does not seem to be of much benefit in severe cases. In milder, chronic cases it does seem to do some good. As a matter of fact, however, when symptoms of tetanus manifest themselves the cells of the central nervous system are ready to die. The use of the serum by intracerebral injection does not seem to add to its value. The operation for the injection is a serious one. Some of the cases reported cured of their tetanus have died later of brain abscess.

Intracerebral Injections.—Dr. Robert Abbe detailed his personal experience with antitoxic serum in the treatment of tetanus On the whole he finds its use of decided benefit. Last summer he saw seven cases of the disease. In five of them, all very bad cases, he used intracerebral injection of tetanus antitoxin. Although all the cases seemed hopeless, three of them recovered. The method of giving the injections employed was that suggested by Kocher of Berne. After a small preliminary incision down to the bone, an ordinary brain drill is employed to pierce the skull. Through this a needle is inserted and the injection given slowly. The needle is pushed on into the lateral ventricle and the injection made into its cavity. If by any chance the point of the needle should penetrate beyond the ventricle the antitoxin comes back over the track of the needle. The point of election for the insertion of the needle is half-way between the outer angle of the orbit and the mid-point of the line over the vertex connecting the external meatuses of the ear. General anesthesia is not necessary for the operation; it can be done under cocaine. The patient is utterly unconscious of pain during the penetration of the needle into the brain substance. There is no heart or respiratory or circulatory disturbance, either at the moment of the operation or later. In one case there was no immediate effect, but slow improvement began shortly after. In the second case there was decided amelioration of the symptoms from the very moment of the injection and convulsions which had been occurring very frequently ceased at once. In two other cases there was amelioration almost at once and a marked effect on the course of the case later on. In a bad case of puerperal tetanus

the patient remained for thirty-six hours without a spasm. When the spasms returned they were slight and subcutaneous injections of the antitoxin were given but without effect. Dr. Abbe believes firmly that intracerebral injections of antitoxic serum have a great future.

The appearance of the wounds through which infection of tetanus takes place is very varied. In a case where the inoculation had taken place in the classical way, by a rusty nail in the foot, the wound had healed so kindly that scarcely any trace of it could be found. Others suppurate and look ugly and when the first symptoms of tetanus begin are apt to have a suspicious look. A gunshot wound of the palm from which tetanus developed had a lardaceous infiltration that seemed to speak for some serious pathogenic agent within the tissues. As in cases of anthrax there is at times an edematous, hard, pork-like condition of the surrounding tissues. It seems well worth while in all cases to thoroughly sterilize wounds where the presence of tetanus may be suspected. Iodine or some other effective antiseptic may be used freely on them.

The prognosis of cases does not always follow the rule that has been set down. Sometimes, although they begin two weeks after the inoculation, they do not run a mild course. Some of the cases that begin mildly have severe exacerbations. It is not an unusual thing to have a sudden relapse more severe than the rest of the disease after a seeming recovery.

Infection Through Frostbite.—Dr. Converse reported a case in which a man lost the terminal phalanges of some of his fingers by gangrene after having had them frozen. When he came to the hospital there was already enough contraction of the facial muscles to produce a typical risus sardonicus. He could move his head laterally, but not anteroposteriorly. He complained that his thorax felt as if in a vise. Amputation of the fingers was done. The spasms continued for some days, but under the use of antitetanic serum subcutaneously gradually abated. Rest and cessation of the convulsion always occurred shortly after an injection of the serum. The convulsions could not be controlled by chloral and bromides, because these drugs gave rise to an intermittency of the heart. In all 720 cc. of serum were given. At first doses of 40 cc. were tried, then 60 and finally 80. The largest dose controlled the convulsive seizures very effectively. Some eruption occurred, especially about the points of injection, and wine-red confluent papules occurred in patches over the body. Desquamation followed. The patient suffered no inconvenience from the eruption, except a slight itching. After the tetanus seemed completely cured, the patient developed symptoms of pyemia and died therefrom. The pyemia seemed to be due to infected serum, the vial which contained it having been allowed by mistake to stand unwrapped and uncorked for some time.

Open Wounds.—Dr. M. Ware said that the tetanus bacillus absolutely refuses to grow in the presence of oxygen. It finds favorable conditions only in the depths of the tissues where free oxygen is excluded. The cardinal prophylactic indication therefore is to lay open all wounds made on the street so thoroughly that they may have free access of air. If this were done in all cases we would have fewer patients suffering from tetanus in the hospitals each year. Air is the very best antiseptic when there is question of tetanus infection. It seems absolutely inadvisable to use the actual cautery or any strongly cauterizing substance where tetanus is suspected. Cauterization makes an eschar which mats the tissues together, occludes the underlying portions, and absolutely shuts off the air. This, instead of hindering the tetanus bacillus, creates favorable conditions for its rapid multiplication and continued growth. Dr. Ware has had under his care during the last few years eleven wounds inflicted by toy pistols. All of them were treated by this open method and none developed tetanus.

Dr. Fisher thinks there is no reason to consider that the nerve-cells are affected by the tetanus toxin. When cells of the central nervous system are affected, the usual result is a palsy; convulsions are never produced. It is irritation of the meninges that gives rise to convulsive symptoms. It is probable therefore that the pathological lesion of tetanus will not be found in the cells, but rather in the meninges.

In closing the discussion Dr. Moschcowitz said he has collected all the cases in which antitetanic serum has been given by intracerebral injection. In only one case did an abscess of the brain develop. In that case the tetanus itself was cured and the abscess developed some eight weeks afterward. At the autopsy the pus of the abscess was found to contain a pure culture of the staphylococcus albus. It is evident that owing to some defect in the surgical technic an infection took place with the fatal results that might be expected. Needless to say the most exact surgical asepsis is required for the intracerebral injections of tetanus antitoxin. Irritation of cerebral tissues and of the meninges is produced by the injection of the fluid. This creates extremely favorable conditions for the multiplication of infectious agents if by any accident they should be introduced. When, owing to the continuation of symptoms, a second intracerebral injection is deemed necessary it is a matter of extreme difficulty to be assured that the granulations through which the injection is made are sterile. Under these circumstances it is well to touch with pure carbolic acid the granulations at the point where the needle is to be introduced in order to destroy any germs that may be present. With proper precautions intracerebral injections are undoubtedly of the greatest service and a distinct advance in the therapeutics of tetanus.

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ORIGINAL ARTICLES.

SOME REMARKS ON THE PATHOLOGY AND SURGICAL TREATMENT OF URINARY AND URO-GENITAL TUBERCULOSIS.[1]

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TUBERCULOSIS of the male uro-genital tract does not differ essentially from tuberculosis in other organs of the body, except that it is, perhaps, more frequently complicated by some form of pus infection. The latter may either antedate the invasion of the tissues by the tubercle bacillus or follow this invasion. The pathological changes produced by these pus infections weaken the resistance of the tissues, intensify the symptoms due to the tuberculous process, frequently obscure the diagnosis of the latter, and render treatment in many cases much more difficult.

Tuberculosis of the uro-genital tract is met with clinically in two forms: First, as a secondary infection, the result of tuberculosis in some other portion of the body, as in the lungs, or it may occur as a manifestation of a generally tuberculous infection of the organism; and, secondly, as a seemingly primary infection affecting at the outset one part of the urinary or genital tract more or less extensively, usually chronic in type. It is this latter form of uro-genital tuberculosis that is of most interest to the surgeon.

It seems strange, notwithstanding the frequency with which tuberculosis is met with as an apparently primary lesion of the uro-genital tract, that so little attention has been given to the subject until within very recent years. A review of the literature of this subject, even during the past decade, is certain to be unsatisfactory to the student seeking positive information upon the subject. There is scarcely a single point either in the pathology or treatment of uro-genital tuberculosis which has not been the subject of discussion and yet in regard to which observers do not differ widely. Notwithstanding, however, the very contradictory statements which have been made, I think it will now be generally admitted by those who are entitled to speak with authority that seemingly primary tuberculous infection of the uro-genital tract does occur, and that it does occur with great frequency. I mean by this that tuberculous lesions are met with clinically in the uro-genital tract without tuberculous lesions being found in any other portion of the organism. It is of course possible that in these cases the primary infection may not have been in the uro-genital tract, but may have occurred in some other part of the organism, as, for example, in the pulmonary lymph nodes, the lesion being so slight as to escape detection. But, although this may be admitted, there are many questions which are far from being definitely settled; for example, it is by no means certain as to the manner in which the tubercle bacillus finds entrance into the genito-urinary tract; nor are we certain what is the original seat of the disease in any given case; nor what part of the genito-urinary apparatus is most frequently the seat of primary infection. Any one who is familiar with the clinical aspects of genito-urinary tuberculosis, and who has given any study to recent literature upon this subject, must be convinced that we need more positive knowledge before we shall be able to speak with anything like certainty upon these questions.

This is unfortunate, because of the importance of our having a definite answer to these questions from the standpoint of treatment. I venture to suggest that these questions will not be answered until a closer and more cordial relation has been established between those who are clinical observers and those who work in our pathological laboratories. The results of post-mortem examination and of pathological research alone are unquestionably of great value, but in order to reach sound conclusions from such observations it is necessary that the clinical histories of the cases which form the basis of the investigation should also be known. I believe that the necessity for this cooperation in the study of disease between clinicians and pathologists is now appreciated by the profession, and I have great hopes that owing to this our knowledge of these questions will be greatly increased in the near future.

But while we are waiting for this improvement in our methods of scientific investigation of disease, we cannot lose sight of the fact that we are daily confronted by patients suffering from tuberculosis of the uro-genital tract who demand immediate treatment. The pain and suffering which this form of tuberculosis often causes make it all the more imperative that we should use our utmost endeavors so far as our knowledge goes to relieve it. It is, therefore, necessary at the present time that as practical surgeons we should adopt, if only provisionally, a working hypothesis:

First, tubercle bacilli may be introduced into the urethra and other portions of the urinary apparatus may be involved subsequently by an ascending infection. I say this is possible. Clinical obser-

[1] Read before the New York State Medical Association at the annual meeting, held in New York, October 15, 16, 17, 18, 1900.

vation, however, does not support this view, and I know of no pathological observations to support it. It is certainly true that infection of the anterior portion of the urethra is of very rare occurrence, and when it does occur it is usually the result of the extension of a tuberculous process from the upper urinary tract.

Secondly, I think that it will also be generally admitted that primary tuberculous infection of the uro-genital tract is usually of hemic origin. It is probable that the tubercle bacilli are taken into the organism either through the respiratory or digestive tract, and are then carried by the blood current to some portion of the uro-genital apparatus either directly or indirectly. It seems probable also that tubercle bacilli enter the urinary tract from the blood, most frequently through the kidney. By this I do not mean that the kidney is always the primary seat of genito-urinary tuberculosis—the kidney indeed may frequently escape infection, although the urine coming from it contain the tubercle bacillus. Such urine, containing tubercle bacilli and passing over the mucous membrane of the urinary tract, may cause disease of the bladder and prostate without any infection of the kidney, provided the resistance of these parts has been weakened, as is so frequently the case, by trauma or previous inflammation due to pus infection. This is analogous to the conditions found in ascending and descending pyogenic infections of the uro-genital tract. At the same time clinical observation would lead us to believe that in many if not the majority of cases of urinary tuberculosis the kidney itself sooner or later does not escape infection.

Tuberculous infection of the kidney is usually first met with in the renal pelvis and does not usually begin in the kidney substance. This cannot be stated as a definite rule to which there are no exceptions. I do not believe, however, that all cases of uro-genital tuberculosis are of renal origin. It is certainly possible that the tubercle bacilli may be carried directly by the blood-current to other portions of the urinary or genital tracts, and this undoubtedly does occur, because we find cases in which the disease seems at the start confined to the epididymis or to the prostatic urethra and no evidence, either in the past or in the future history of such cases, makes it necessary for us to insist upon the renal origin of the infection.

Clinically speaking, the most common seat of so-called primary tuberculosis of the uro-genital tract would seem to be in the epididymis. This is always involved before the testicle proper; tuberculosis of the latter I believe only occurs as the direct result of extension of the tuberculous process from the epididymis.

Contrary to the view usually held, my own investigations have led me to believe that, although tuberculous epididymitis may occur alone, it is usually associated with more or less involvement of the prostate or prostatic portion of the urethra. It is impossible, however, to state this as a positive fact, and more study and better observation will be necessary before this can be done.

Again, while it is possible that tuberculosis of the bladder may occur as a primary affection, the clinical data are wanting to confirm such an opinion. It seems almost certain that tuberculosis of the bladder is always secondary to a primary tuberculosis of the kidney, the bladder becoming affected by descending infection, or is secondary to a primary tuberculosis of the lower uro-genital tract, beginning either in the epididymis or in the prostate; the bladder is then affected by an ascending infection.

Tuberculosis of the uro-genital tract is not caused alone by the introduction of the tubercle bacillus into the organism. There must be in addition a weakened cellular resistance of the part affected. The causes of this diminution in resistance in the uro-genital tract are as yet very imperfectly understood.

The object of operative treatment in primary tuberculosis in any portion of the urinary tract is in the first place curative; that is, we seek to remove as thoroughly as possible the entire focus of disease. When this can be done a cure is possible, but possible only in cases where the general tissue resistance of the patient can be increased and maintained. When the disease has advanced too far to permit of its entire removal, an operation may be justifiable for the purpose either of relieving suffering, or of prolonging life, and even in some of these latter cases a cure is possible if the general tissue resistance can be increased and maintained.

I do not think that we recognize sufficiently the fact that the removal of isolated tuberculous foci is not in itself curative. The experience of every hospital surgeon is convincing that, while the immediate effect of operative treatment upon uro-genital tuberculosis is good, the vast majority of these cases are only temporarily relieved and return sooner or later either with an extension of the original disease or with a new focus of infection in some other portion of the body. As this occurs in some cases where apparently the entire focus of disease has been removed, it is probable that the infection of the uro-genital tract was only apparently primary. The results of operation for tuberculosis are much more satisfactory in patients of the better class who are able to procure a suitable environment after operation, so that their general health and powers of resistance may be increased.

The Importance of an Early Diagnosis.—The value of surgical intervention in the treatment of tuberculosis of the uro-genital tract depends upon the direct origin of the infection and upon the seat and extent of the disease. The more circumscribed the lesion, and the more recent the infection, the better chance is there for effecting a radical cure by operation. It follows, therefore, that it is of the utmost importance to make a diagnosis in every case at the earliest possible moment. The methods of diagnosis

have been much improved during the past few years, and it is along this line that the greatest progress has been made in the study of urinary tuberculosis. But our present methods of diagnosis, although a great improvement on those formerly used, are by no means perfect. But, notwithstanding their defects, it is to be greatly regretted that they are not more generally understood.

It cannot be denied by any one, looking fairly at the facts as they now exist, that the diagnosis of tuberculosis in any portion of the urogenital tract is usually not made until the disease is well advanced. For example, it frequently occurs that a patient with a beginning renal tuberculosis will complain of subjective symptoms referable to the bladder, *viz.*, frequent urination, pain and tenesmus at the end of the act, and yet have no vesical or prostatic lesion. The only objective symptom is a slight pyuria with or without hematuria and the latter is often overlooked. Such a case is treated for inflammatory disease of the posterior urethra, or for a cystitis—calculus is often suspected. The patient is subjected to frequent and often unnecessarily severe instrumentation for the purpose of reaching a diagnosis or in the course of treatment, and it is only after repeated examinations have failed to show any lesion of the bladder or of the prostate and after local treatment has failed not only to relieve the patient's condition, but has made him worse, that the possibility of tuberculosis being present begins to be considered. Unfortunately for the patient, as the result of delay and improper treatment, the tuberculous process has spread from the kidney to other portions of the urinary or genital tract, and the favorable opportunity for surgical relief has passed away. The statement may well be emphasized that unnecessary and frequent instrumentation is a fruitful exciting cause for the extension of the tuberculous process in the urinary tract by producing trauma favoring infection, and weakening the resistance.

I believe that it is of the utmost importance in all cases of chronic inflammatory urinary disease, in which the nature of the disease is not perfectly clear, that as a matter of routine practice the urine should be frequently and carefully examined for the presence of tubercle bacilli and that even when tubercle bacilli cannot be found the possibility of tuberculosis should be kept constantly in mind. It has been frequently said that the presence of tubercle bacilli in the urine is difficult to find. This undoubtedly is true in some cases of tuberculosis, especially where but few bacilli are present. I cannot at the present time enter into a detailed description of the best methods for examining urine to determine the presence of this bacillus. I can, however, say as the result of personal experience that the failure to detect tubercle bacilli is more often due to the mode of examination than is usually supposed. The best results can be obtained only when the urine is examined immediately after it has been voided by the patient. The sediment should be collected by centrifuge and slides should be prepared at once. The examination of urine after the specimen has stood for a number of hours and from which the sediment has been collected simply by gravity rarely gives satisfactory results unless a large number of bacilli are present.

In addition to the improvements made in our methods of urinary examination, our ability to make a positive diagnosis has been greatly increased by improvements in the cystoscope and in the facility with which in practised hands this instrument and ureteral catheterism can be employed. In the early stages of tuberculosis direct inspection of the bladder and orifice of the ureter is of great value, and when the conditions are favorable for catheterizing the ureters we can determine the condition of either kidney with great accuracy. Unfortunately, in many cases of advanced disease cystoscopy is impossible, and I am inclined to think that except in skilful hands the practice of cystoscopy and ureteral catheterism does more harm than good.

The result of any operation upon the urogenital tract for tuberculosis is governed by the same rules which we apply to other surgical diseases. The immediate result of any operation will depend upon the general condition of the patient, upon the state of the lungs, and of other organs, upon the age of the patient and the extent and seat of the disease.

Operations upon the Kidney.—Operations for tuberculosis of the kidney may be divided into three classes: (1) Operations in those cases in which the kidney is primarily affected and in which the diagnosis of urinary tuberculosis has been made while the infection is purely bacillary; (2) operations in cases in which the tuberculosis is primarily in the kidney and in which there is a mixed infection, but without tuberculous disease in any other portion of the urinary tract; (3) those cases of advanced tuberculosis of the kidney with secondary tuberculosis of other portions of the urinary tract. I believe that in all cases of tuberculosis of the kidney in which an operation is not absolutely contraindicated by the general condition of the patient, surgical interference is not only justifiable, but is imperatively demanded. The results of operation, however, will vary within very wide limits, and at the present time it is impossible to generalize in regard to the prognosis of any of the three classes of cases mentioned above. As a general rule when operation upon the kidney for tuberculosis is indicated the choice should be given to nephrectomy.[1] Recent statistics show that the immediate mortality of nephrectomy and nephrotomy is about equal, but the remote results are greatly in favor of nephrectomy. We find that 61.71 per cent. of cases died during the first year after nephrotomy, while only 12.54 per cent. died during the first year after nephrectomy. Of 63 cases operated upon by nephrotomy 39 died during the first year, and of the 24 that survived all had permanent fistulæ. Of 335

cases operated upon by nephrectomy 42 died during the first year by a spread of the tuberculous process to other organs. Of the 293 which survived the operation 33 were living at the end of the first year, 41 lived three years, 4 lived five years, 7 lived six years, and 2 lived eight years. A very small proportion of these cases suffered from fistula, namely 7 in 105 operations. It would seem, therefore, that nephrectomy should always be the operation of choice where only one kidney is affected, and I believe that the operation is frequently indicated even when the other kidney is the seat of beginning tuberculous infection, if the patient be put in surgical condition. The question has been frequently discussed as to the necessity of removing the ureter in cases of nephrectomy performed for tuberculosis. To do this increases the risk of the operation and frequently, I believe, subjects the patient to unnecessary risk.

In early cases of renal tuberculosis the upper part of the ureter is alone affected. In advanced cases in which the entire ureter is involved the operation upon the kidney is only palliative; and to remove the kidney simply increases the risk of the operation without doing any permanent good.

Tuberculosis of the Genital Tract.—Primary tuberculous infection of the genital tract may begin in the epididymis, or in the prostate, or possibly in the seminal vesicles; the primary involvement of the latter is very doubtful. The genital tract may also be involved secondarily as the result of tuberculosis of some portion of the urinary tract. Tuberculosis as a primary infection of the genital tract attacks most frequently the epididymis, but I believe that the prostate is more frequently the seat of tuberculosis than is usually supposed. Tuberculosis of the seminal vesicle is, I believe, nearly always secondary to tuberculosis of the epididymis or of the prostate. The spermatic ducts, or vasa deferentia, are never primarily infected by the tubercle bacilli. In these canals the disease is always secondary either to tuberculosis of the epididymis or of the prostate. If these statements are true it is apparent how important is an early and accurate diagnosis of the exact seat of the lesion in determining the extent of an operation.

Cases of genital tuberculosis may be generally classified into three groups: First, when the epididymis is the seat of primary disease and when the disease is limited to this part; second, when the epididymis is involved as the result of a descending infection from the prostate, but without involvement of the seminal canal; third, when the testis proper, as well as the epididymis, is involved, and in such cases the seminal canal is always more or less the seat of tuberculous diseases.

It would be impossible at the present time for me to discuss at all fully this question of operations upon the genital tract for it is the subject of active discussion among all those interested in genito-urinary surgery. Opinions of the most competent of observers differ so widely upon this subject that I am forced to give only my own opinion, which is based upon a large clinical experience. The principal questions at issue may be formulated as follows: (1) Is castration indicated in every tuberculous condition of the epididymis, or can we by more conservative methods accomplish the same results? (2) When the epididymis or testicle alone is involved is it necessary for us to remove the seminal canals and seminal vesicles and portions of the prostate, even if these latter do not appear at the time to be the seat of disease? At present I am very strongly of the opinion that when the epididymis is the seat of primary disease, and even in cases where there is some involvement of the prostate, if the testicle itself be healthy a conservative operation will give as good results as castration. Excision of the epididymis, together with as much of the seminal canal as seems to be diseased is, I believe, the operation of choice in early cases. It is possible by opening the inguinal canal to remove the seminal canal nearly as far as its junction with the duct of the seminal vesicle. And I believe that when the epididymis or a testicle has to be removed for tuberculosis it is best to remove as much of the seminal duct as can be done through this incision. When the testicle proper is the seat of a tuberculous process conservative measures are useless and castration with the removal at the same time of the seminal canal is the only operation to be considered. In such cases the prognosis is usually bad as to ultimate cure, and the operation can only be considered as a palliative measure. The value of more extensive operations upon the genital tract, which aim not only to remove the diseased testes and cord, but also the seminal vesicles and more or less of the prostate, are now under consideration. I think that my own is in accord with those who have had much experience with these operations. They are difficult to perform and the results which follow such surgical interference have been far from satisfactory.

Tuberculosis of the Prostate.—Primary tuberculosis of the prostate has been denied by many very competent observers. The statement by Sir Henry Thompson that the prostate was never the seat of primary tuberculosis has been accepted and, I believe, still influences the thought of the present time. I am convinced that primary tuberculosis of the prostate does occur and is far from infrequent. It is difficult to diagnose, and, as a rule, the tuberculous process has extended from the prostate to other portions of the genital or urinary tract before the diagnosis is made. It is frequently possible by pressure upon the prostate with the finger introduced into the rectum to obtain the secretion from the prostatic follicles, which, upon examination, will be found to contain tubercle bacilli when repeated examinations of the urine have been negative. Except in cases of isolated tuberculous

nodules in the prostate, or in cases in which such nodules have broken down and have resulted in so-called tuberculous prostatic abscesses, there is little that we can do with certainty for the disease in this organ. I am strongly of the opinion that in a large number of cases of slow developing abscess of the prostate the cause of the condition when carefully sought for will be found to be tuberculosis. In such cases I believe that the proper course to pursue is to remove as completely as possible the diseased portion of the prostate, and I am sure that in many cases this can be done with great benefit to the patient.

Tuberculosis of the Bladder.—As I have already stated tuberculosis of the bladder is, I believe, always secondary either to tuberculosis of the kidney or of the lower uro-genital tract. It is, of course, possible that the bladder may be primarily infected, but clinical experience and the results of post-mortem examinations show that this rarely occurs. The surgical treatment, therefore, of bladder tuberculosis can never be curative and must be regarded only as a palliative measure unless the original seat of the tuberculous infection can also be removed. Local treatment of tuberculosis of the bladder is, I believe, absolutely valueless. When the bladder is involved by a tuberculous process, and the condition is complicated by some form of pus infection, local treatment may give some relief by controlling the latter, but each treatment has no effect upon the progress of the tuberculosis. There are few conditions met with by the surgeon in which he can do so little as he can to relieve the symptoms resulting from tuberculous infection of the bladder. It may be possible at times by opening the bladder to apply local treatment more effectually and subsequently, by draining of the viscus, to relieve suffering, but the cases in which relief has been given are very few, compared with those in which no good has been accomplished by operation and in many of these the condition of the patient has been rendered worse. I believe that the reason for failure to accomplish more by surgical means in tuberculosis of the bladder is the fact that when the bladder has become involved the disease in other parts of the uro-genital tract has progressed too far to warrant any surgical interference.

It has been possible in the time at my disposal to present very imperfectly only a few points in regard to uro-genital tuberculosis, and these have been presented more for the purpose of suggesting the extent of the subject than of answering the many questions which are met with by every investigator in this department of pathology. There are but few of these questions to which we can at present give positive answer, and there are few fields of scientific research which have been so little explored. I hope that the observations which I have made may at least be suggestive, and may possibly stimulate others to enter this field of research.

[1] Rapport sur la valeur de l'intervention chirurgicale dans la tuberculose renale par M. Pousson (de Bordeaux). "Ann. des Mal. des Organ. Genito-Urin.," Vol. xviii, 1900.

PROGRESSIVE PERNICIOUS ANEMIA.[1]

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Within the limits of this discussion, I cannot hope to consider in every detail the subject that has been assigned to me. Fortunately, there are certain aspects of this question which at the present day require no discussion, being so universally recognized as to be matters of common knowledge. For example, the symptomatology of the disease is so uniform that little has been added to the knowledge of it since the earliest descriptions of Addison. Practically the only exceptions of consequence are the minuter knowledge of the gastric manifestations, the recognition of certain intra-ocular signs and symptoms, and the group of nervous manifestations referable to the peripheral nerves and spinal cord that have been lately studied.

If, however, the symptomatology of the disease is well known, the etiology, the pathology, and the diagnosis are still grounds of dispute and uncertainty, and even the definition requires careful consideration.

What shall be considered as a practical definition of this disease? Addison regarded it as a form of progressive anemia without definite cause, and Biermer practically agreed with him. At the present time the majority of observers are disposed to include in the category of pernicious anemia cases which are not progressive in character, but, on the contrary, are distinctly relapsing, and cases in which the etiology is more or less clear. Looking at the subject from another point of view, it may be recalled that some years ago the disease was described as primary when it was thought that the essential feature was a disturbance of the blood-making organs, as the result of which the integrity of the blood suffered deterioration. In view of the observations of Quincke, Hunter and others, this view is untenable, and the abnormal condition of the bone-marrow, first discovered by Pepper in 1872 and since regarded as the most constant lesion of the disease, is quite generally looked upon as secondary and not characteristic. It is known that in all forms of destruction of the blood, the bone-marrow and the other lymphadenoid tissues hypertrophy in the attempt to compensate for the loss of corpuscles. This leads to the production of new blood cells, more or less immature, and it has been the view of many that the processes in the bone-marrow in pernicious anemia, while perhaps more active and at the same time productive of less mature corpuscles, because more rapidly evolved, are otherwise identical with the processes that occur in all forms of cachexia in which the bone-marrow is called upon to increase its normal activity. Ehrlich and some of his pupils have maintained, on the contrary, that there is a distinct form of activity in the marrow

[1] Read at the seventeenth annual meeting of the New York State Medical Association, held in New York, October 15, 16, 17, 18, 1900.

in pernicious anemia to which he would give the term megaloblastic, and that this does not occur in other forms of anemia or cachexia. The only answer that can be made to this is that Ehrlich's view rests upon no scientific demonstration excepting that a certain form of nucleated red cell is common in pernicious anemia and rare in other forms of anemia or cachexia.

In the light of our present evidence, it is certain that the disease under discussion results from rapid destruction of red blood-corpuscles for which the blood-making functions do not suffice to compensate. Moreover, it is practically settled that the source of the hemolytic agents is the gastrointestinal tract. In the case of pernicious anemia resulting from the presence of *bothriocephalus latus* in the intestines or from invasion of this tract by other parasites, there is certainly little doubt of the operation of toxic agents; while in more obscure cases the discovery of atrophic conditions of the mucosa, ulcerations, or cancer, makes it seem likely that similar poisons are generated and occasion the blood-destruction that initiates the disease. If these considerations are admitted, and it may be said with little reservation that they are established, pernicious anemia is a secondary condition and not a disease. It remains, however, to note this important fact: Not every subject having *bothriocephalus* in his intestines develops pernicious anemia, and the disease does not invariably follow upon the grave gastrointestinal conditions alluded to. It is possible that in certain cases a special sort of infection may be superadded to the primary conditions or that the hemogenetic function of the bone-marrow in certain persons is deficient or perverted. The latter seems to me the more likely view because, in the first place, no definite proof of a coincident infection has been discovered, and, in the second place, the characters of the blood in pernicious anemia suggest a profound disturbance of hemogenesis.

There are still a few authorities who believe or assert that pernicious anemia is a primary disease and that there is no such thing as secondary pernicious anemia. The evidence in favor of this position is entirely negative and wholly inadequate. A careful review of established facts warrants no other conclusion than that which I had occasion to state in a paper on the "Treatment of Pernicious Anemia" in 1896 in the following words: "As far as our knowledge of the disease extends to-day, it is but a symptomatic disorder of the blood and not a disease in the strict sense. It matters not whether a cause is discovered or not; whether there be gastrointestinal lesions, parasites in the intestines, pregnancy or parturition, or no discoverable cause, the resulting condition of the blood, the symptoms, the course and tendency to fatal termination, and the general post-mortem lesions are the same, and I can therefore see no justification for setting apart a group of cases as true Addisonian pernicious anemia, and calling all those in which causes are found severe secondary anemia." Practically, the same view is expressed by Ehrlich in his monograph published in 1900 (Ehrlich & Lazarus, Nothnagel's Series) in these words: "We must, however, always remember that we are not dealing with a disease *sui generis*, but with a frequently recurring symptom-complex which may accompany a variety of diseases." In consequence of these views it is necessary to look upon pernicious anemia as a secondary disorder with a characteristic clinical course and with certain peculiar blood changes.

I may not consume time by detailing the clinical features of the disease, but will refer only to a quotation from Addison's monograph to which Pepper first alluded in his important paper published in 1872. Addison says: "For a long period I had from time to time met with a very remarkable form of general anemia occurring without any discoverable cause whatever—cases in which there had been no previous loss of blood, no exhausting diarrhea, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous or malignant disease." And further on: "It makes its approach in so slow and insidious a manner that the patient can hardly fix a date to the earliest feeling of that languor which is shortly to become so extreme. The countenance gets pale, the whites of the eyes become pearly, the general frame flabby rather than wasted, the pulse perhaps large, but remarkably soft and compressible, and occasionally with a slight jerk, especially under the slightest excitement. There is an increasing indisposition to exertion, with an uncomfortable feeling of faintness or breathlessness on attempting it; the heart is readily made to palpitate; the whole surface of the body presents a blanched, smooth and waxy appearance; the lips, tongue and gums seem bloodless, the flabbiness of the solids increases, the appetite fails, extreme languor and faintness supervene; breathlessness and palpitations are produced by the most trifling exertion or emotion; some slight edema is probably perceived about the ankles; the debility becomes extreme, the patient can no longer rise from bed, the mind occasionally wanders, he falls into a prostrate and half-torpid state, and at length expires; nevertheless, to the very last, and after a sickness of several months' duration, the bulkiness of the general frame and the amount of obesity often present a most striking contrast to the failure and exhaustion observable in every other respect." It must be added to this description that irregular and occasionally continued fever is a frequent symptom, that gastric and intestinal symptoms, such as vomiting and diarrhea, are common, and that ophthalmic examinations usually reveal hemorrhages in the retina. With these brief statements, I must leave the subject of symptomatology to proceed with that of the hematological features.

Examination of the blood discloses several more or less characteristic abnormalities: (1) The number of red blood-corpuscles is reduced below the number seen in any other condition;

(2) the red corpuscles present varied and marked alterations of shape, size, character, and staining relations; (3) the hemoglobin, while greatly reduced in amount, is often in excess relatively to the number of the corpuscles and is very rarely diminished more than the corpuscles, the "globular richesse" of Hayem therefore being usually at par or plus and very rarely much below par; (4) the total number of leucocytes is usually reduced and the mononuclear elements, especially the smaller forms, are nearly always relatively more numerous than the polymorphous cells or, in other words, the total leucocytic reduction occurs at the expense of the polymorphous leucocytes.

Let me now refer in detail, but briefly, to some of these facts: The number of red corpuscles and the percentage of hemoglobin have been regarded as most essential factors in diagnosis by Hayem and Laache, while Ehrlich has sought to minimize their importance as compared with his own methods of morphological study of the cells. A strictly impartial student must admit that a continuation of the two methods is necessary to a certain diagnosis. I have seen a few cases in which a sole reliance upon the enumeration of the red cells and the estimation of the hemoglobin would have led to erroneous conclusions, and have, on the other hand, found some in which the morphological diagnosis would have been uncertain. As a result of my experience, I would conclude that there are very few cases, if any, of conditions other than pernicious anemia in which the number of corpuscles is below 1,500,000 and the hemoglobin approximately equal in percentage to that of the corpuscles. There are cases of cancerous cachexia and post-hemorrhagic anemia in which such profound reduction of the number of corpuscles does occur, but in these the amount of hemoglobin is reduced to even greater degrees. Looking at the other side of the question, we may regard as fairly established the following facts: (1) Poikilocytosis reaches its highest grades in pernicious anemia; (2) macrocytes and an average excess in size of the red corpuscles are more common in this than in any other disease; (3) polychromatophilia and macrocytosis are more striking in this disease than in any other; (4) megaloblasts are more abundant and more regularly present in pernicious anemia than in other forms of anemia; and (5) a combination of all these factors practically assures the diagnosis. It cannot, however, be asserted that any one of these conditions makes the diagnosis certain, and it is no longer regarded as proper to establish the diagnosis upon any one of these factors with the possible exception of the presence of megaloblasts. Ehrlich states that the "positive demonstration of undoubted megaloblasts in combination with the presence in abundance of megalocytes is indicative of pernicious anemia, since these conditions proclaim without question that the embryonal type of blood-formation has superseded the adult variety, even if but limited areas of the marrow are so affected." This statement is singularly elastic. Its acceptance requires agreement upon the question of what constitutes an "undoubted" (unzweifelhaft) megaloblast, and what must be regarded as "abundance" (reichlicherem Auftreten) of megalocytes. Taking it, however, at its most rigid interpretation the statement is erroneous. I have seen two cases of leukemia which during an interval of aleucocytosis must have been regarded as instances of pernicious anemia according to Ehrlich's view, and several other cases of profound anemia in childhood would have been similarly diagnosed. Of course, I am prepared to admit that Ehrlich's statement may be accepted for the great majority of cases, but would insist that the exceptions be admitted and the statement be less dogmatic.

In less definite fashion, Ehrlich, and those who have followed him, would make it appear that a preponderance of large red corpuscles (megalocytes) and the predominance of megaloblasts, when there are both normoblasts and megaloblasts, are necessary conditions to establish the diagnosis of pernicious anemia. This view also seems to me unwarranted. I have seen cases of what in every other respect must have been regarded as progressive pernicious anemia (and one at least in which autopsy confirmed the diagnosis) in which during the entire clinical course of the disease repeated examinations had discovered abundant normoblasts with comparatively few megaloblasts. It must be remembered in connection with this statement that the definition of a megaloblast is uncertain and that the criterion by which Ehrlich has sought to classify the erythroblast, namely, the size and morphological properties of the nucleus, is not admitted by others. According to this mode of differentiation many of the cells which I have habitually regarded as normoblasts would naturally fall into Ehrlich's group of megaloblasts. It is difficult on this account to reach any practical conclusions as to the validity of his views, but it is certain that in the cases to which I have alluded normoblasts outnumbered megaloblasts, even with the strictest interpretation of Ehrlich's definition.

For my own part, I do not pretend to arrive at the diagnosis of this disease by any one condition or by any limited number of conditions. It is as necessary in the case of pernicious anemia as in that of any other systematic disorder to take into account the clinical course and history as well as the results of special laboratory investigations. There is a disposition in some quarters to withhold the diagnosis of pernicious anemia, except in such cases as present the blood-count of a most extreme anemia, while, on the other hand, some others are inclined to make the diagnosis when the blood-count and the general condition of the patient are seemingly but slightly affected and when few large megalocytes and possibly megaloblasts have been discovered. Neither of these methods of diagnosis seems to me judicious. Pernicious anemia can undoubt-

edly be recognized at stages prior to the extreme reduction in the number of corpuscles and when the patient is still in a comparatively good state of health, and, in some instances, during intervals of apparent cure the blood-picture and the physical examination reveal sufficient evidence to justify the diagnosis, although the patient is then seen for the first time. While this is true, I believe that it is unwise to hazard the diagnosis in cases in which the blood-count is but slightly altered merely upon the discovery of a few abnormal cells, even of such cells as I have referred to—megaloblasts. I am inclined to stand upon the opinion I expressed in a paper on "Nature and Diagnosis of the Disease," read before the Philadelphia County Medical Society in May, 1894, and I would quote from that paper as follows:

"My own observation leads me to regard as pernicious anemia any case presenting suspicious clinical features in which the red corpuscles number less than 1,500,000 per cubic millimeter, and in which the hemoglobin shows about the same proportionate reduction. The diagnosis becomes certain in cases in which the hemoglobin is relatively in excess, and in which great alteration in the size and shape of the red corpuscles and the presence of large nucleated red corpuscles are observed. In addition to these characters of the blood, pernicious anemia presents a train of clinical manifestations scarcely to be mistaken when present in their typical form."

I cannot dwell further upon the matter of diagnosis and wish now to pass on to some considerations regarding prognosis. I have not seen a patient with pernicious anemia who has been cured. I doubt the diagnosis in the case of Hayem, the only one in the literature which may, according to Ehrlich, be looked upon as one of permanent cure of the disease. One of my cases has been under my observation since 1892 and is still in good health. Several other cases in my experience have remained in fair health for as much as four or five years, but I have never seen nor known of a case in which it could be reasonably supposed that the disease was cured.

While the prognosis *quoad vitam* is hopeless, the outlook *quoad valetudinem* is often quite hopeful. Many cases of pernicious anemia may improve spontaneously from time to time, and the intervals of comparative freedom from discomfort may be as long as several months or even a year or more. Medicinal treatment unquestionably aids in securing this favorable outcome and when a period of improvement has set in, the continued use of proper remedies secures for the patient the continuance of his favorable condition.

No case of this disease is sufficiently serious to warrant a hopeless feeling regarding its treatment. I have several times seen temporary recovery take place when the patient was reduced to the last point of anemia, was comatose and unable to take or retain food.

I wish to say one word here regarding the alterations in the blood-count. I am aware that certain authors have reported remarkable, sudden improvements in the character of the blood. It is not reasonable to suppose that these are due to sudden formation of large numbers of red corpuscles; on the contrary, the probable explanation is found in the assumption of an alteration in the distribution of the corpuscles or a reduction in the quantity of serum. Some have referred to the improvement in the blood after attacks of diarrhea. It is entirely conceivable that such increase in the number of the corpuscles may be the result of inspissation of the blood through a loss of serum. Even the character of the corpuscles may have changed and the cells may assume a more normal appearance. This, however, may also result from a thicker, more normal condition of the serum. Improvements in the character of the blood to fairly normal conditions may, however, actually occur from a restoration of the hemogenetic function, but such improvements are recognized as more settled by their persistent progressive character.

TREATMENT OF TYPHOID FEVER.[1]

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Inasmuch as the personal equation cannot be eliminated from a patient with typhoid fever, all stereotyped methods of treatment are open to criticism, and although it will always be typhoid fever, the affection varies with the individual and the environment, and great are these variations. We have to consider carefully the fundamental power of resistance, as well as to estimate the probable extent of the infection. We have to deal with the peculiarities of constitution or temperament of each patient, equally with the disease, and to be guided by his idiosyncrasies. Consequently we must treat the individual who has the typhoid fever rather than the typhoid fever to the exclusion of other considerations.

There are several important principles regarding the management of this disease. The patient must be put to bed at once and there be kept until an advanced period of convalescence; this is of the utmost importance. Those victims of the disease who struggle against fate, and go about for a week or ten days, are very prone to a fatal termination; and those who by any mischance get out of their beds are greatly in danger of death in various ways. One young man who continued to keep up and to attend to his daily duties well into the second week of typhoid fever, despite many ominous warnings, died of intestinal hemorrhages within eight days after he finally took to his bed. An acquaintance of mine allowed his patient to travel several hundred miles at the beginning of an attack, in order

[1] Read before the Newport (R. I.) Medical Society, July 17, 1900.

to reach home, and this error in judgment resulted fatally as might have been expected. A young boy who got out of bed and walked to the end of the ward in a semi-delirium during the absence of the nurse, some years ago at Roosevelt Hospital, fell and died of a ruptured spleen. Sometimes toward the end of the fever, when the heart is at its lowest ebb, there will be a collapse from a premature attempt to assume the upright position.

The food must be of a nature that can be easily assimilated, and that will not irritate the intestinal tract by the coarseness of what remains to be excreted. While there is a difference of opinion as to what is the most judicious kind of food, my experience and possibly my prejudices strongly incline me to a fluid dietary. Certainly too much solid nutriment has been the cause of death. I recall a painful example of the sudden death of a patient who was well on the road to recovery, and who was surreptitiously given some grapes to eat by a well-meaning but inconsiderate friend. Water should be freely administered; it undoubtedly flushes the tissues and assists elimination. Fresh air must be provided in abundance, for it supplies the waste-matter in the pulmonary circulation with a means of oxidation. And now we have reached a point where it is a question what further should be done in addition to the regular routine nursing. Simplicity should be our aim in the management of typhoid fever. In fact, the more a physician departs from this standard the farther he is apt to be removed from a high order of intelligence. The mild cases will recover without any medication.

The malignant infections commonly will result in death in spite of all treatment, while those that occupy an intermediate position will often be saved through well-designed measures. Possibly some of the very best results can be shown in the entire absence of medication, but I should not consider it wise to advocate, to the exclusion of all else, the expectant treatment. Nor can it be called strictly scientific to undertake to force this, that, or the other exclusive method upon the profession. For a working hypothesis it is well to assume that Nature performs the greater part of the recuperative process, and that the less meddling the better, barring accidents. When the patient has been placed under the conditions already discussed, he occupies a position somewhat analogous to one who has had a broken limb reset and placed in splints. The knitting is done by a natural process, if it is done at all, and not by the surgeon.

About ten years ago, in a paper on the "Prevention and Treatment of Typhoid Fever," which was read by me before the Medical Society of the State of New York, I quoted from Flint's Practice of Medicine the death-rate of 307 cases treated by Dr. Cotting of Boston without drugs of any kind. It was ten per cent. I likewise referred to the 250 cases of typhus fever treated at Bellevue Hospital by Alonzo Clark. At this time there were as many more cases under the care of his colleagues, and among these there was a great mortality. "Although it was winter, the windows were removed, stoves were placed before the open spaces to warm the incoming air, and, except for moderate stimulation, no medicine was given. Not one of the 250 cases died, and in two weeks they were convalescent." In acknowledging the receipt of a reprint of my paper, the late Dr. William Halle Walshe of London said, apropos of these statistics, that having been a student of the great Louis, in Paris, he had always taken a deep interest in the subject of typhoid fever, and that at one time he made an investigation of the mortality of all the principal hospitals in Europe and found by far the best results were obtained at the Hotel Dieu, in Paris, where the death-rate was only 5 per cent. and the treatment was entirely without medication. What is more, Dr. Walshe did me the honor of telling me that he was wholly in accord with my views on this vital subject.

Students now and then ask for an opinion of the merits of the so-termed Woodbridge method of treating typhoid fever. It is reported that during the Spanish war a board of medical officers at Fort Meyer Hospital found in 57 cases treated by Woodbridge himself, and he was afforded every facility for the experiment, the mortality was 10 per cent., while of all cases treated otherwise it was but 7 per cent. There were in all about 600 cases treated at this time.

The question is sometimes asked me, "Do you pursue the alcohol treatment?" To which of course I reply that alcohol is used when it is required. My belief is, however, that often alcohol is much more freely and extensively used than is necessary. Once there were three cases being treated in the same ward of a hospital with which I was connected, whereof one was taking no stimulant, one was taking a little wine, and another needed and received the best part of a quart of whiskey every twenty-four hours for over two months; all recovered. In the '70's there was a time when the tub-bath, which has recently been much in evidence, was quite extensively employed. There was a patient in my hospital with a temperature ranging from 104° to 105° F., and a pulse running along at 60 per minute; his legs and arms as well as his body were covered with a rose-colored eruption. He was systematically tubbed, but he died nevertheless. The conclusions drawn from that and many other trials of the system have since inclined me to considerable caution in my selection of candidates for this kind of treatment.

The temperature does not disturb me as much as the nervous symptoms, which are a better index of the gravity of the situation, and there seems to be nothing so soothing to meet these conditions as some form of cold-water application. But it need seldom be an actual tub-bath. Anything that puts such a strain upon a patient *as to require free stimulation in consequence* had better not be employed indiscrim-

inately. A sponge-bath of one-third alcohol and two-thirds cold water thoroughly carried out, in the majority of instances, will accomplish the desired results with considerably less expenditure of strength on the part of the patient. If this is not sufficient a more copious application of water, called the slush-bath, may be employed. And then there is the wet pack together with the sprinkler. Some cases, however, will have high fever and practically no nervous symptoms, and their condition may never become very alarming.

Many years ago I advanced the proposition that fever is probably a conservative process and that while it remains within bounds it should not be the object of much solicitation. It is owing to our ignorance of this matter that we have been guilty, in times not long past, of so much meddlesome interference. The thermometer has its uses and is invaluable, yet it becomes dangerous in the hands of those who are unable rightly to interpret its revelations. In all my experience I have never been open to the charge of ordering a dose of antipyrin, or its congeners as an antipyretic in typhoid fever. My last patient has just recovered after a six-weeks' illness. His temperature during the second week rose to 104° F., and once, in the early morning, strange to say, it reached 105° F. His blood reacted quickly to the Widal test. Rose-colored spots appeared in crops upon his arms, legs and body, in profusion. Still, his pulse remained good and there were no nervous symptoms. His only medication, some dilute sulphuric acid, and a little calomel on the first day, might easily have been omitted. The rest of the treatment consisted in cold sponge-baths every two hours as long as his temperature remained above 102.4° F., which it continued to do for a short period to the contrary notwithstanding. In my opinion the safest intestinal antiseptic remedies, if any are to be tried, are mild laxatives. And for moving the bowels ordinarily a rectal injection. One of the worst cases of hemorrhage that I have encountered was treated successfully by ice to the abdomen and quarter-grain doses of powdered opium every fifteen minutes until controlled. There were three separate copious hemorrhages. When the bowels move more than three or four times in twenty-four hours, subnitrate of bismuth in large doses, alone or with small doses of morphine, will often be all that is required. Strychnine, ammonia, alcohol, and ether are the supporting remedies to be relied on when indicated. We must be guided by our estimate of the condition of the patient's muscular system, including the heart, as to how much he shall be allowed to do when the fever has gone and when the time comes for getting up. In my opinion he should be kept on a soft diet for a week or ten days. At all events, we must feel our way, always leaning to the side of caution in relation to his regimen in those dangerous and trying days of the patient's convalescence.

INCREASING THE THERAPEUTIC VALUE OF COD-LIVER OIL BY THE ADDITION OF FREE IODINE AND FREE PHOSPHORUS.[1]

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COD-LIVER oil, the oil of the liver of the *Gadus morrhua,* has been a much used remedy for rheumatism, scrofulous and wasting diseases for centuries, but only within the past century has it become a standard remedy with the medical profession. Many have been the preparations introduced as substitutes, but nevertheless it still stands preeminent and really alone in its special field—a field which in our opinion cannot be said to be entirely dependent upon the fatty ingredients of the oil, nor upon its halogen constituents, nor upon its nerve-building property.

The purposes of this paper are to compare the modern cod-liver oil with the cod-liver oils of the time prior to 1853 and to discuss the seeming relative loss in therapeutic action of the newer oils, and also to endeavor to explain the cause of this loss as well as a means for overcoming it. When the Icelander or the Norwegian of the long ago went fishing for cod he brought in his catch, packed the livers in barrels and headed up the barrels. He continued doing this all the season, which usually lasted for about three months. After the season was over he opened the barrels and skimmed off the floating oil. Of course by this time, even in those cold regions, the livers were in an advanced stage of decomposition. This oil was the best oil of those days and was usually a light yellow color and known as raw *medicinal oil.* By continuing this process more oil, but of a darker shade of color, was obtained and this was known as *pale oil.* Later on when the putrefaction became further advanced the oil became a browner color, and this oil, called *light-brown oil,* was drawn off and kept separate from the former. When no more oil could be squeezed out, the residue was heated in a cauldron far beyond the boiling-point and the oil thus obtained was known as *brown oil* and was rarely used medicinally, being employed in the arts, especially for tanning processes, etc. Indeed, even the variety known as the *light-brown oil* was often rejected for internal medicinal purposes. Of the above-mentioned varieties of oil all were contaminated by the putrefactive process. Only one variety—the brown oil—was subjected to the influences of heat.

Since the introduction of the Möller[1] steam process in 1853 the method of obtaining the oil has all been changed. As the oil is prepared today in Norway, at the celebrated fishing grounds of Lofoten and Romsdalen, the livers are taken usually within six or eight hours after the cod has been caught and subjected to this process.

[1] Read before the Section on Therapeutics and Materia Medica of the American Medical Association, Atlantic City, N. J., June 5–8, 1900.

At both these places the fishing season extends from January to April, and as the thermometer then generally registers below freezing, there is no chance for decomposition to occur between the catch and the preparation of the oil. At the fisheries of Newfoundland and Massachusetts and at those on the Shetland Islands and the Eastern coast of Scotland, as well as those on the coast of Russia and in Iceland, the fisheries being carried on at a considerable distance from the land, and at the two places first mentioned during the hot season, it necessarily follows that putrefaction must occur before the oil is prepared.

By the steam process the livers are heated over a large water-bath, or in jacketed cauldrons, or, when the process is carried on aboard ship, in an open inverted cone of wood, the purpose being to relieve the livers of all the contained oil by means of a temperature not above 180° F. To-day the old processes have been supplanted by this steam process.

With reference to the normal composition of the oil of to-day, no one has given the subject a more thorough study than F. Peckel Möller[2], who has published a work of some 492 pages, the index of which contains nearly 3000 titles. It is considered by far the most complete exposition of the subject that has ever been presented.

By a study of this and of the other chemical researches on the subject, we are at once convinced that we are dealing with a most complex organic body containing, one might almost say, numberless constituents. Möller classified the components of cod-liver oil as follows: Hydrocarbons; oxygen compounds; combinations of oxygen compounds; oxygen cyclo-compounds; halogen compounds; sulphur compounds; nitrogen compounds; proteids; ptomains and leucomains; toxins and antitoxins; ferments. The oil which he studied is one peculiarly free from putrefactive compounds, on account of being made at once from the fresh livers, and is peculiarly free from adulterations such as might arise from the use of the livers of other fish, as in the Norwegian waters during the cod season practically no other fish exist. The cod abound and destroy all the other fish, whereas, in the Newfoundland, Massachusetts, Scotland and Russian fisheries the cod, the pike, the haddock, the ling, the whiting, and many others, even the shark, are frequently caught and their livers are probably used in the preparation of the oil. How much more complicated may be the chemical composition of such a mixture, especially when subjected to the usual putrefactive processes, I know not.

As to what may be the active principle or principles of this complex body there has been much discussion, and we seem to be as far from a satisfactory solution as half a century ago. At various times various ingredients have been so designated, in their turn the title has been given to the supposed alkaloids, to the morrhuol, the iodine and bromine, to the trimethylamine, to the contained fat, to the phosphorus, as well as to many other of its constituents. No doubt it has no single body which can represent the sum total of its activities, but must be considered as a complex organic body whose therapeutic effects, while evident, are yet withal a multiple action.

The therapeutic virtues of cod-liver oil are within certain lines peculiar to itself. Its effects on patients with struma, scrofula, tuberculosis, syphilis, rheumatism, gout, rachitic and nervous affections, as well as on sufferers from wasting diseases, are marked and typical; no other agent producing exactly the same effects, no other or combination of oils or of other constituents bringing about the same general results. Its alterative, tissue-building and tissue-repairing, as well as general nourishing qualities are marvelous, but as to just how these results are brought about we can but theorize.

In partial explanation of its action is the fact that in the case of no other known oil are osmosis and endosmosis so rapid. It is emulsified more rapidly than any other known fat in the presence of pancreatic juice and glycerin without any gum. It is thus more easily digested than any other known oil and possesses, therefore, greater nutrient qualities. If this were all of its beneficial properties it would in its sphere be without a peer, but when, in addition to the nutrient and digestive function, we observe its prompt alterative effects, we must be convinced that we are dealing with a therapeutic agent which, while not thoroughly understood, has for ages been of incalculable value to the human race and one whose virtues can probably never be thoroughly explained.

Its nerve-building energies are perhaps in a great part due to the phosphorus it contains, making it extremely valuable for shattered nervous systems as well as in rachitic cases; its prompt and thorough alterative effects observable in the strumous, scrofulous, phthisical and rheumatic are due probably to the contained iodine and bromine, as well as perhaps to other constituents the therapeutic value of which is not known.

When we try to compare the virtues of the old oil with that now manufactured, I think there are several facts which indicate that the former was therapeutically the more efficacious. In my boyhood I took cod-liver oil daily for months at a time extending over a period of several years. In those days the two oils were in competition, the steam-prepared, yellow oil was the more pleasant to the taste and to smell, but our "family doctor," as well as all of our experienced friends, advised the old, browner more odorous and more fishy oil; the consequence was I began early to inquire why there was any need to take the more disagreeable oil. All I learned was that its effects were more prompt and more thorough, that in the opinion of the older doctors of that day the new oil was deficient in some of the healing virtues of the old, and their belief was so universal that I early became convinced that this was a truth and not merely a prejudice.

Tending to the same conclusion, if we look over the medical literature of the period of 1855 to 1870, we find that as the old oil gave way to the new, numerous manufacturers placed preparations of cod-liver oil on the market purporting to be fortified with one or more of its active principles, especially do we notice *iodized oil, phosphorized oil*[3], used in varying strengths up to ¼ grain to the ounce of oil, and *brominized oil*. It is significant, to say the least, that this flood of fortified oils should appear at this time immediately after the adoption of the new steam process. It would seem that some lack in the new oil must have been detected at once. This endeavor to improve on the nutrient and alterative virtues of the new cod-liver oil continues to quite an extent even up to the present day.

Between the new and the old oils there are but two fundamental differences. (1) The old oils contained a much greater proportion of the decomposition products, such as the alkaloids[4], than the new oil. These alkaloids are by some considered as abnormal[5] and by others as the active principles.[6] (2) The old oils necessarily retained more of their volatile constituents than the new oils, as in the process of preparation of all the old medicinal oils no heat of any kind was used, subsidence and pressure only being the means of expression, whereas all of the new oils are subjected to a long-continued heat of about 180° F., and often much above this point; thus the volatile constituents, especially the halogens and the phosphorus, are in great part removed in the preparation of all the modern cod-liver oil.

Convinced of the above facts, some years ago I began to contrast the therapeutic effects of the new oils as compared with the same oil fortified by the addition of iodine, bromine and phosphorus, and I was soon satisfied that their addition seemed to intensify the normal therapeutic virtues of the oil. Later on, not being convinced of the distinctive value of the bromine in the preparation, I omitted it, retaining only the iodine and phosphorus.

Feeling sure of my position in this matter, I gave my formula to a Philadelphia druggist with the request to so combine these elements with the oil as to retain its normal pale color while endeavoring to improve both the odor and palatability.

As the result of our experiments we succeeded in producing a preparation which we have designated, *Oleum Morrhuae Iodi-Phosphoratum*, a clear, light-yellow oil, flowing perhaps more freely than most good oils, having less of the fishy and less of the hydroxylation odor than usual and a much less marked fishy taste. Each tablespoonful of this oil is fortified with one-one-hundredth of a grain of pure free phosphorus and one-twelfth of a grain of pure free iodine, neither ingredient being at all noticeable either to taste, sight or smell, and yet by the method of ultimate analytical analysis all recoverable therefrom.

As having perhaps an important bearing on this question, I will call attention to an alterative preparation rather extensively used in our city, quite constantly by the late Dr. Pepper and by him sometimes called a summer substitute for cod-liver oil. I refer to *Vini Iodi Comp.*, each teaspoonful of which contains one-one-hundredth of a grain of free phosphorus and one-sixth of a grain each of free iodine and bromine. It is typically an alterative. It has little or no effect upon the bodily weight, except inasmuch as it stimulates growth by restoring to the tissues healthy action. In no sense is it a nutrient and thus differs markedly from cod-liver oil. It is extremely valuable as a substitute for all those patients usually benefited by cod-liver oil, who, on account of the extreme heat of the summer or a temporarily abnormal sensitiveness of the stomach-walls or a nervous excitability of the palate, are unable for the time to take oil. It seems to have all the virtues of the oil without its nourishing and fattening qualities.

I have found this fortified oil more easily taken than others. It is less repulsive to the taste and smell, and in many cases patients soon learn to like its taste as well as its effects. It is more easily digested and much less liable to be followed by eructations. This increased digestibility is no doubt due to the soothing influences of the iodine on the stomach-walls. It is more prompt in its systematic effects in building up the tissues. Its alterative effects are more prompt and more pronounced. The prescription reads as follows:

℞ Olei Morrhuæ Iodo-phosphoratum, Oi.
S. One tablespoonful at night, only on retiring, preferably followed by a taste of lemon.

For a period of perhaps seven years I have constantly been prescribing it, using it in a thousand or more cases, and I have had but two or three instances in which patients insisted that they could not take it. I have not observed a single case in which it had a bad effect, and in every case I believe I noticed an advantageous effect markedly beyond that which I formerly observed in similar cases when using the plain oil in equal quantity. I have named it *Iodo-Phosphorized Cod-Liver Oil*, and usually write my prescriptions as here noted, rarely ordering it to be taken more than once a day and then at bedtime. When necessary to use it oftener I prescribe it at meal-time in addition, but I do this rarely. Occasionally I have the patient take a little whisky with the oil, but almost invariably advise that a piece of lemon be used after taking the oil.

I believe this matter of prescribing the oil at night, the last thing at night just before slipping into bed and taking the lemon thereafter, to be a very important one to the patient, making its administration more pleasant and its digestion more rapid.

This preparation of *oleum morrhuae iodi-phosphoratum* is a perfectly stable preparation made

agreeable by the addition of aromatics, containing 95 per cent. of pure Lofoten cod-liver oil, each ounce containing one-sixth of a grain of pure free iodine and one-fiftieth of a grain of pure free phosphorus. It will keep indefinitely if stored in a cool place and tightly corked, but, like all cod-liver oils, if kept too long, for a few years, for instance, or exposed to the light, the fatty acids become oxidized, in other words, hydroxylation occurs and the oil then becomes unpleasant to the stomach.

No cod-liver oil, however, can be expected to keep well without hydroxylation for a much greater period than a year after its preparation, and this preparation of *oleum morrhuae iodophosphoratum* must in this respect be judged by the ordinary standards. Convinced that, if this preparation be tried faithfully and used as advised, it will meet with approval, I take pleasure in recommending it to the notice of the profession.

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MEDICAL PROGRESS.

Inhibition of Heart in Diagnosis.—After discussing the methods employed by various investigators in producing cardiac inhibition, and the results obtained by them, Albert Abrams (*Phila. Med. Jour.*, September 29, 1900) says that in his experience inhibition of the heart is best attained, for clinical purposes, by voluntary, forcible contraction of the muscles of the neck. This maneuver is easily learned, even by children. If too much exertion is employed in contracting the muscles of the neck the result will be acceleration, not inhibition, of the heart-movements. In the case of those patients who cannot learn the maneuver, the writer places a long, narrow cushion under their chin and directs them to press with all their might on the cushion with their chin. By this maneuver the heart's action is not stopped, but there is obtained an inhibition of the intensity of the heart-tones. Abrams cites seven cases illustrating the value of the inhibition maneuver as an aid to diagnosis and presents the following essential facts as the result of his investigations: (1) The inhibition maneuver will cause organic cardiac murmurs to become faint and in exceptional cases will render them inaudible. (2) Transmitted murmurs are more amenable to the maneuver. (3) The fainter the murmur, the more easily is it suppressed by the maneuver. (4) When a transmitted murmur can be inhibited, the tone which it masks can be auscultated. (5) Heart-tones are less amenable than are heart-murmurs to inhibition. (6) Hemic murmurs are more readily inhibited than are the organic murmurs. (7) Usually the murmurs of anemia may be suppressed, and their evanescence is marked by the reappearance of tones. (8) Exocardial murmurs are easily influenced by the inhibition maneuver. (9) When the inhibition maneuver is incorrectly executed, the result is to increase the intensity of the murmurs owing to increased exertion which intensifies the heart's action. (10) The inhibition maneuver when often repeated is futile in its results owing to overstimulation of the vagi. (11) In irregular action of the heart or in delirium cordis, the inhibition maneuver, by momentarily inhibiting the rapidity of the heart, renders signal service in determining the time of a murmur; the effect of the maneuver being practically like that of digitalis. (12) The inhibition maneuver enables us to determine the condition of the vagi as inhibitors of the heart and guides us in the use of cardiotonics.

Mesenteric Cysts.—Upon these relatively rare occurrences, C. N. Dowd (*Annals of Surgery*, October, 1900) suggests these data. The diagnosis is rather difficult because the cyst is commonly freely movable and gives tympanitic resonance on all sides of itself, and in the uncomplicated cases is not connected with the pelvic organs. The symptoms are chiefly those of the mechanical presence of the cyst, namely, pain from pressure, constipation and vomiting, occasionally emaciation ascribed as a rule to interference with the chylous return. The prognosis corresponds with the facts that these cysts are to be considered among the serious abdominal tumors, and that they are usually so situated as to be rather easily removable. When practicable exploratory incision and ablation are indicated, when removal is impracticable suture to the abdominal parieties, evacuation and drainage are necessary. Jessett has successfully enucleated a cyst and resected a portion of the intestine included in its wall, just as has been done with solid mesenteric growths. As to the pathogenesis the following summary is stated: (1) A multilocular cyst-adenoma of the transverse mesocolon, containing pseudo-mucin exactly like a cyst-adenoma of the ovary, suggests its probable origin as an embryonic ovarian sequestration; (2) dermoid cysts in the same situs suggest the same embryonic source; (3) chylous cysts in the mesentery, whose contents are chyle and whose walls contain lymphatic vessels, indicate embryonic cysts into which an effusion of chyle has occurred; (4) sanguineous cysts appear to be cysts into which hemorrhage has occurred; but hematomata of the mesentery should not be described as sanguineous cysts; (5) cysts whose walls resemble intestine are evidently sequestrations therefrom; (6) serous cysts are usually similar to the classes above but are not usually in the paths of the lacteal vessels; (7) hydatid cysts are a class by themselves and are due solely to the tenia ecchinococcus; (8) reports indicate

that these cysts are encountered at least once per month. If examination were made of its contents and walls probably the whole matter would soon be cleared up; (9) probably the whole pathogenesis can be explained as either embryonic, hydatid or malignant.

Ammonio-Formaldehyde.—This drug may be used in the form of urotropin, cystogen, or ammonioform, with uniform effect. The more important effects of urotropin, as exploited in Germany and in this country, give rise to the following axioms: (1) The effects of urotropin are almost entirely confined to the urinary passages. (2) These effects are due, in part at least, to the liberation of formaldehyde in the urine. (3) These effects are heightened acidity, marked antiseptic properties, and variable irritation of the neck of the bladder. Edward L. Keyes, Jr., (*Phila. Med. Jour.*, September 29, 1900) discusses some of the advantages of the drug and certain limitations to its usefulness and suggests a practical way of handling it to the best advantage. Fifteen to forty-five grains are usually given as the daily dose, and most writers say that if the daily dose be kept below thirty grains the irritation, the pollakiuria, and dysuria will not appear. Keyes reports a number of cases illustrating some of the variations in the action of urotropin in different cases. Case I. had had paralysis of the bladder, with cystitis and pyelitis, for about thirty years. Seven and a half grains of urotropin three times a day caused serious vesical irritation. Later fifteen grains daily cleared the urine of bacteria and all shreds, but twenty grains doubled the deposit and caused some irritation. Any remission in the administration of the urotropin in this case was followed by a reappearance of the bacteriuria, while fifteen grains kept the urine clean. In Case II. forty-five grains were given daily for nine days without any vesical irritation. The drug was then given in a daily dose of fifteen grains for a month, at the end of which time there were no bacteria or albumin present. The urine has remained clean for two weeks at this date. The writer thinks the difference in these two cases, as to the vesical irritation, is one of idiosyncrasy. After giving urotropin the writer has been able to dilate strictures without causing a chill, and he habitually employs the drug in cases in which urinary chill or septicemia are present or threatening, especially in operative work. Case III. illustrated the post-operative diuretic effect which Keyes has observed in a number of cases. He has, however, never known urotropin to have any diuretic or other beneficial effect on chronic uremia. In Case IV. a wound caused by a suprapubic prostatectomy sloughed and did not heal because of formalin irritation due to the fifteen grains of urotropin which the patient was taking daily. On substituting salol for the urotropin improvement and, eventually, healing took place. From his experience in other cases, the writer believes that this patient exhibited an idiosyncrasy. Keyes sums up his conclusions as follows: (1) Urotropin seems to be almost a specific in some cases of uncomplicated acute catarrhal pyelitis. (2) To prove effective it may have to be administered in large doses until the urine is practically free from bacteria, after which a smaller dose may be sufficient. (3) In judging the effects of the drug, the centrifuge and the microscope should be employed. (4) The dose must not be sufficient to cause pollakiuria and dysuria by irritation of the neck of the bladder. (5) The possibility of such an irritation cannot be overlooked even when small doses are given. (6) Urotropin is extremely serviceable as a prophylactic of the various forms of urinary septicemia and urethral chill. (7) Its routine employment both before and after operations on the urinary passages is indicated. (8) The urine containing urotropin occasionally has an escharotic effect upon wounds which may constitute a contraindication to its use.

Primary Renal Tuberculosis.—O. G. Ramsay (*Annals of Surgery*, October, 1900) formulates the following conclusions upon this subject: (1) That primary renal tuberculosis may be classed as a semi-malignant form of inflammation, and that for this reason surgical treatment is always indicated. (2) That this surgical treatment will have a palliative or a curative end in view depending upon the condition of the patient and the extent of the local pathological process. (3) That nephrotomy in renal tuberculous processes is to be designated as a palliative operation with the chief aim of the immediate relief of grave symptoms, and that it does not preclude a secondary nephrectomy, and that coupled with free evacuation and drainage of abscesses is a most valuable procedure. (4) That resection of a diseased portion of a tuberculous kidney is a most dangerous procedure, because it is not always possible to take out all the disease and a focus so left behind may infect the other kidney or the system at large or both. (5) That nephrectomy or nephro-ureterectomy is distinctly indicated in every suitable case and in suitable cases should result in permanent cure in 55.5 per cent. of all cases. (6) That the indications against nephrectomy are tuberculous disease of the other kidney or of other organs in the body. (7) That tuberculous disease of the bladder is not to be considered a contraindication to nephrectomy because it will probably heal later. (8) That a small tuberculous focus in the lung, provided the patient is otherwise well, is not to be considered as a contraindication. (9) That in cases of doubt as to whether a patient can stand an immediate nephrectomy, it is best to do a nephrotomy and leave the nephrectomy to a later date. (10) That the clamp method of managing the pedicle is contraindicated on account of the danger of hemorrhage upon removing the clamp. (11) That it is safest to remove the ureter with the kidney, as a persistent fistula may give trouble if it be allowed to remain in the body. (12) That the majority of these fistulæ tend to heal

either after the removal of a deep suture or after the slow disappearance of tubercular disease along the ureter, which then becomes a fibrous cord. (13) That we may expect an increasing number of cures as our means of diagnosis improve and our surgical technic is carried out more scientifically and carefully.

Some Cardiac Conditions.—The most inferior and posterior portion of the heart, writes W. H. Porter (*Post-Graduate,* September, 1900), is the left auricle, and from it the blood flows to the ventricle from right to left, forward, and usually upward, toward the junction of fourth rib and cartilage. All organic valvular lesions come under five headings, *viz.*: Congenital malformations, acute and chronic endocarditis, acute and chronic dilatation of the cavities, rupture of a valve-segment, and rupture of the chordæ tendinæ. In mitral regurgitation the murmur is produced by some of the blood flowing back from one full cavity to another full cavity having less blood-pressure. If the blood-pressure in the ventricle falls until equal that in the auricle, the murmur disappears, to reappear when the tone of the ventricle is restored. This systolic murmur is transmitted to the left, usually lost at the anterior axillary line, and heard again posteriorly midway between the angle of the left scapula and the vertebræ. The presystolic murmur of mitral stenosis is really a systolic murmur of the left auricle; if the muscular power becomes enfeebled the murmur may entirely disappear, and with the resumption of power it is reestablished. This murmur and that of aortic stenosis are produced by blood flowing in its normal direction; the murmurs of regurgitation, by blood flowing against the normal current. A presystolic murmur without alteration in structure of the mitral valve may occur with aortic incompetency if the rapidly regurgitated blood reaching the left ventricle floats up a segment of the mitral valve so as to cause partial obstruction. It not infrequently happens that a mitral systolic murmur persists in life, but autopsy shows no mitral lesion. The insufficiency may have been due to unequal innervation, or unequal nutrition of the papillary muscles, causing one to allow its valve-segment to float too far into the auricle and thus producing a gap. The treatment of cardiac lesions should be directed to establishing a higher nutritive condition in the heart, and throughout the whole system; for when hypertrophy takes place to produce compensation, there is no corresponding augmentation of the blood-supply to the heart muscle, and degeneration follows, with dilatation and finally lack of compensation.

Epidermolysis Bullosa.—A case of this rare and unique affection is reported by C. P. Russell (*Jour. Cutaneous and Genito-Urinary Dis.,* September, 1900). The patient was a boy, eight years of age, born in Alaska. He has always been strong and well. Has had no diseases except measles when he was two years old. From the history it is probable that he has had the present disease for five or six years. The history is that he has been troubled almost constantly with recurring large and small bullæ, forming usually over the joints or wherever the integument is tightly stretched. These bullæ, in nearly every instance over a joint, occur most frequently in response to a slight bruise or blow. Some of these bullæ, especially those not directly over a joint, seemed to have arisen spontaneously. The knuckles of both hands have always been a favorite location for the formation of the bullæ. On the knuckles the bullæ vary in size from a split pea to a dime, but about the wrists and ankles they are sometimes as large as a half dollar, while over the knees they are three or more inches in diameter and form a large bulging sac distended with a straw-colored serum. It has been noticed by the boy's guardian that preceding the formation of an unusually large bullæ there would be a slight swelling and raising of the skin, with some congestion. The lower extremities have been most effected. A very slight knock or pressure on the skin is sufficient to cause a bulla. The bullæ are of very irregular shape primarily, and their irregularity not being due to the fusion of two or more, is characteristic of this disease. The boy presents no other symptoms of any sort, except marked hyperidrosis. He perspires freely even in winter. This profuse perspiration has been a marked feature in nearly all cases hitherto reported. In many cases heredity seems to be an etiological factor, but no such influence can be traced in this case. An illustration, showing the character of the lesions, accompanies the report.

Prostatectomy.—The technic of this operation, claims H. Mynter (*Annals of Surgery,* October, 1900), should be improved especially by avoiding suprapubic cystotomy or laparotomy in order to crowd the organ down to the operative field, and thus obviating the shock of the operation and the prolonged after-treatment in bed, to say nothing of the other greater risks. In a patient of his, weighing two hundred and forty pounds and except for the prostatic diseases perfectly healthy, he followed this method. The usual straight anteroposterior perineal incision was met by a semicircular one embracing the anus and close to it. The rectum was next freed and the prostate, well in view all the time, was crowded down by a hand above the symphysis pubis. A stone-searcher occupied and outlined the urethra. Enucleation of all the lobes was accomplished without deliberate opening of the bladder or the urethra. The urethra was accidentally torn between the sound and the finger-nail toward the end of the operation. This necessitated the drainage and the long after-treatment which would otherwise have been avoided. This tear can be escaped beyond doubt, the writer thinks. Where cystitis makes drainage necessary, a permanent catheter can be tried, or, failing in that, the urethra can be opened later in the perineum well forward. The removed prostate in this case weighed 2¾ ounces.

THERAPEUTIC HINTS.

Influenza.—H. C. Wood recommends the following:

℞ Antipyrin ..... 1.0 (gr. xv)
Pilocarpin. muriat..... 0.03 (gr. ss)
Tinct. aconiti..... 0.25 (gtt. viij)
Aquæ q. s. ad..... 45.0 (℥iss).

Dose: A tablespoonful followed by a general bath or foot-bath lasting ten minutes; after this, the patient is put to bed, and a dessertspoonful given in a glass of hot toddy, to be repeated in twenty minutes unless sweating occurs before. If there is much pain, 0.01 gram (gr. 1/6) of morphine may be added to the mixture.

Chronic Parenchymatous Nephritis.—It is this form of nephritis, writes James Tyson, which gives rise to the intense anemia so characteristic, and iron and other tonics must be administered. Much of the headache, general discomfort, and constipation, however, is due to too large doses of iron, and this should never be given in sufficient amount to blacken the stools. Basham's Mixture is valuable, or the following, in which the amount of iron may be varied and enough acetic acid added to make a solution:

℞ Tinct. ferri chloridi..... 4.0 (℥i)
Liq. ammon. acetat.....120.0 (℥iv)
Acidi acetici q. s. ad. solv.
M. Sig., a dessertspoonful night and morning, freely diluted.

Strychnine is an admirable adjuvant tonic to the iron, and may be dissolved in the same mixture. —*Amer. Text-Book of Applied Therapeutics.*

Calomel in Hemorrhoids.—This drug is not only curative, but also prevents the phlebitis which causes so much pain. For external hemorrhoids give laxatives, and powder with calomel; for internal hemorrhoids use calomel suppositories or an ointment of

℞ Calomel ..... 2.0 (gr. xxx)
Vaseline .....
Lanoline .....aa. 15.0 (℥ss).

Add belladonna or opium if desired. Wash anus with boric-acid water after each defecation.—*Jour. de Méd. de Bordeaux,* Sept. 23, 1900.

Chronic Constipation.—The formula for Hinkle's cathartic pill is:

℞ Cascarin .....
Aloin .....aa. 0.015 (gr. ¼)
Gingerine .....
Ext. belladon.....aa. 0.008 (gr. ⅛)
Podophyllin ..... 0.01 (gr. 1/6)
Strychnine ..... 0.001 (gr. 1/60).

Dose: One three times a day, or one or two at bedtime.

Prolapse of Rectum.—For loose sphincter with slight prolapse in a child of two years, Jacobi advised faradism for four or five minutes each day, hypodermics of strychnine sulphate, 0.001 gram (gr. 1/60), every second day, and the local application of five- to ten-per-cent. ext. nux vomica ointment, a piece the size of a pea after each defecation. For the prolapse of sessile polypi, he orders the insertion of a piece of ice, injections of ice-water, and a lotion of one- to two-per-cent. tannic-acid or alum solution.

Acute Rheumatism.—A useful lotion to be applied to the inflamed joints on warm lint is that of Dr. Fuller:

℞ Tinct. opii..... 30.0 (℥i)
Potass. carbonatis..... 15.0 (℥ss)
Glycerini ..... 60.0 (℥ij)
Aquæ .....270.0 (℥ix)

The dressing should not be covered by any impermeable material.—*Amer. Text-Book of Applied Therapeutics.*

Purulent Pleurisy.—Capitan at once aspirates all the fluid possible; if it returns, he again removes it and injects a few drops of camphor and betanaphtol, equal parts, or some peroxide of hydrogen. If the pus then persists, an opening is made under cocaine, by knife or thermocautery, and drainage established. He agrees with Desplats that the operation is simple and that removal of rib is unnecessary. As anesthetic and to avoid cardiac or respiratory difficulties a good injection is 1.0-2.0 cc. (♏ xv-xxx) of

℞ Cocainæ hydrochlor.... 0.10 (gr. iss)
Morph. hydrochlor.... 0.05 (gr. ¾)
Sparteinæ sulphat..... 0.20 (gr. iij)
Atropinæ sulphat..... 0.02 (gr. 1/3)
Aq. dest. q. s. ad..... 10.0 (℥iiss).

This is supplemented by ethyl-chloride spray. At the first sign of trouble inject:

℞ Sparteinæ sulphat..... 0.05 (gr. ¾)
Caffeinæ .....
Sod. benzoat.....aa. 0.20 (gr. iij)
Aq. dest..... 1.0 (♏ xv).

Repeat if necessary. He lays stress on not operating till the deposits of fibrin have become loosened from the pleura. Normally a certain dulness and indistinct breathing persist after aspiration, and when this disappears above the level of the reaccumulating fluid, it indicates detachment of the fibrin. The results of operation are satisfactory in empyemas due to pneumococcus, streptococcus, or staphylococcus, but not in those of tubercular origin.—*La Méd. Mod.,* Sept. 5, 1900.

Chronic Bronchitis.—In the majority of cases the derivatives of tar, turpentine and balsams are the most efficient expectorants. They are specially indicated in relaxed conditions of the mucous membranes, with excessive secretion, in combination as follows:

℞ Ol. Terebinthinæ } ..... aa ♏ 20
Picis Liquidæ... }
Ol. Eucalypti ..... ♏ 50
Balsami Tolutani ..... ℥ 1½
Benzosol ..... ℥ 4.

M. et disp. in caps. No. 60. Sig. One four or five times a day.—*Butler, Medical Standard.*

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SATURDAY, OCTOBER 20, 1900.

THE NEW YORK STATE MEDICAL ASSOCIATION.

The seventeenth annual meeting of the New York State Medical Association, held on Monday, Tuesday, Wednesday and Thursday of this week at the New York Academy of Medicine, was the most successful gathering in the history of this organization.

This Association has been pushing its way into the front ranks on straightforward and praiseworthy lines, and the high standards it has steadily advocated have tended to make a centralized and harmonized body capable of exerting much valuable influence on the medical interests of the country.

The meeting was attended by over three hundred members and delegates from every region of the State and the social and scientific features were unusually well managed and attractive. The rule of twenty-minute papers was adhered to in a manner that reflected much credit on the President of the Association.

The symposium on Obstetrics was practical and brought out a number of papers of much value, that on the Blood was marked by a series of studies of great interest and importance. A number of these we will present to our readers. The group of papers on Tuberculosis was characterized by breadth of treatment, as most of the organs of the body were considered in their relation to the tuberculous process.

Taken as a representative meeting of the State Association, its officers and well-wishers can be proud of the showing made.

HEMATOLOGY AND DIAGNOSIS.

The examination of the blood constitutes one of the most important features in the scientific medicine of to-day. Scarcely known ten years ago beyond the confines of physiology, the study of hematology has now by steady elaboration, mainly in the hands of Hayem, Ehrlich, Thayer and Cabot, assumed a prominent position in the thought and practice of scientific physicians. The symposium on the blood given before the New York State Medical Association this week is another evidence of that wide interest taken in the subject by all progressive physicians ever ready to make use of the most recent acquisitions of scientific investigation.

In the discussion at this meeting questions mainly of clinical interest were considered. During the course of his remarks on the technic of blood examination, Dr. Edward K. Dunham of New York pointed out the well-known sources of error in the estimation of hemoglobin by the Fleischl instrument usually employed. Variations in the diffusion of the coloring principle and the element of personal equation in the comparison of the tint obtained constitute the more serious inaccuracies in the estimation; the latter alone, in the speaker's opinion, amounts to at least five per cent.

Appreciation of the value of blood-tests in surgical practice is still of very recent date. This is one of the most promising sides for future research in work of this kind. Many points in diagnosis were ably discussed at this meeting by Dr. Bloodgood of Johns Hopkins University. The author, as a result of his careful studies of the leucocyte count with reference to abdominal surgery, was able to formulate some valuable conclusions with regard to appendicitis, peritonitis and intestinal obstruction. By the leucocyte estimation alone he showed that an earlier diagnosis, always of importance in these conditions, was often possible. A high leucocytosis is evidently almost always present in acute appendicitis, being particularly high when the appendix is distended with pus or in the gangrenous forms. With an increase in the severity of the symptoms there is usually a corresponding in-

crease in the leucocytosis; with amelioration the count usually falls quite rapidly. A rising leucocytosis with symptoms of appendicitis is then always a serious indication. With a count of over 20,000 under these conditions Dr. Bloodgood urges immediate operation; gangrene, abscess formation, or peritonitis have probably already begun. In cases with a recent history of appendicitis and a high leucocyte count, the probabilities are that abscess formation has occurred; however, absence of leucocytosis does not exclude such a condition.

It is agreed that the leucocyte count rises with the increase in the acute peritonitis; however, just before death a rapid fall occurs very often, a condition sometimes very confusing, for just such a thing occurs with abatement of the peritoneal inflammation. Dr. Bloodgood has particularly investigated typhoid peritonitis in this connection; his results are of great practical value. Dr. Thayer and he have found that any rise of the white cells in typhoid fever almost invariably indicates some definite inflammatory complication. And peritonitis is no exception to this rule. With a rapidly rising count and abdominal distress the diagnosis of perforation may be considered highly probable.

The most recent views regarding pernicious anæmia and leukemia were ably considered by Drs. Stengel and White of the University of Pennsylvania. With the exception of some contributions to the gastrointestinal lesions and detail to the other symptoms the masterly description of pernicious anemia by Addison stands today just as it did then. Dr. Stengel regards the disease as a toxic affair, probably of gastrointestinal origin. The blood-pictures in this disease and leukemia were long supposed to possess specific diagnostic features; Drs. Stengel and White, however, both showed, as others have already done, that a consideration of all phases of the blood examination associated with the clinical history are necessary for an accurate and intelligent interpretation of the condition.

The malarial parasites in their connection with blood examination were discussed by Dr. Le Wald of New York City. A very complete exposition of the mosquito theory of infection as enunciated by Manson and his followers was given. The speaker accepted their main conclusions *in toto*.

The value of blood examination in the diagnosis of trichinosis, already exploited by Brown, Thayer, Blumer and others, again received further confirmation by the studies of Dr. Gordinier of Troy, N. Y. He reported two cases with complete blood examinations; the well-known increase of the eosinophiles which occurs in this disease alone made possible the probable diagnosis, verified later by other methods.

When methods for the determination of the germicidal and protective powers of the serum will have been devised, then, indeed, will we seemingly have reached the utmost point in one of the richest fields of study. With the progress of the times, it seems not unreasonable to believe that this will shortly be forthcoming.

THE HEALTH OF CITY DWELLERS.

In the innocence of youth we used to imagine that there was no health within city walls. We even shared the delusion which possesses so many foreign artists and makes them portray the American urbanite as an attenuated conglomeration of skin and bones; as one, in fact, whose incessant pursuit of the elusive dollar has brought him to such a sad state of physical, mental and moral decrepitude that he is fit only to serve as a horrible example to mankind. On the other hand, the tiller of the soil stood—in our young fancy—as the very incarnation of health. For us all farmers were round and ruddy, their helpmeets buxom and prolific, their offspring freckled and strong-limbed.

What havoc the evolutional realities of the past few decades have played with the fancies of the artist and the child! And all because the city dweller has learned to give due heed to the laws of hygiene. He has discovered the vast importance of municipal and domestic sanitation, the equally great value of proper food and clothing, and the absolute necessity of interrupting the routine of toil with a proper modicum of play in the open air.

It is upon the importance of this rapidly increasing tendency of the city dweller to play out-of-doors that we wish to dilate. Never before in the history of this country has Nature cast such a spell over him in such a sane, wholly commendable way. She has no great living disciple like Thoreau, who can convert people to her so eloquently as almost to persuade them—as Rousseau did—to go on all fours. Nor would the city dweller of to-day listen to such a sermonizer upon Nature. He is eclectic in his tendencies, knows the value of cosmopolitanism to a mind of healthy

growth, and compromises with Nature by taking certain courses at her school. These courses are of a peripatetic order of a peculiarly healthful type, in that it is the student and not the teacher who does the walking about. Now, if the booksellers' announcements are any index, the number electing these courses this last spring must have been enormous, for on every hand we were met by the statements that popular treatises on birds, and trees, and wild flowers were selling in the thirty thousands. What the resultant rambles in the open mean in the way of pleasurable emotion and delicious fatigue to the purchasers of these books we leave to our readers to surmise.

Of all the many artifices by which Nature decoys the city dweller to her haunts for a time and gives him health and pleasure in return for his neglected work, lack of space forbids even the mention. For some years now the camera craze (salutary madness!) has been upon us and set our motor activities toward the open. It has excited to a high pitch our roving instincts and awakened our appreciation of Nature's choicest beauties. Even the trolley car, dread juggernaut, deserves to have its therapeutic value weighed in the balance with its deadly propensities. It has taken us to charming suburbs where, between lunch and dinner, we might fill our lungs with the uncontaminated air of heaven and see wild things growing, and hear the song of birds. The bicycle, much abused instrument of health, certainly should have its meed of praise. On the whole it has been of immense value to the city dweller as a means of exercise in the open and has enabled him to escape for varying periods of time out of the ruts of daily life.

What we owe to the game of golf as a factor in the maintenance of the city dweller's health cannot easily be estimated. Never has a game been introduced into this country which has so quickly secured such a powerful hold upon persons of all ages and nearly all conditions. It takes its devotees out-of-doors under the most ideal circumstances imaginable and requires no greater expenditure of energy than they are perfectly safe in making.

The dress reform which has followed in the wake of the widespread tendency among urbanites toward the open is in itself worthy of the physician's warm approval. Look at the shirt-waisted and short-skirted young woman of to-day as, with bare head and bronzed bare arms, she pursues the wayward golf ball over hill and dale. Her movements are as lithe and free as those of a young animal, and her indifference to the elements is superb. Contrast her with the representative of the same social stratum of a few years ago—the "pale and interesting" young woman with a penchant for syncope and sour edibles—and see if we have not gained vastly by the change. The ideal types of young American womanly and manly beauty which the artist, C. D. Gibson, created ten or more years ago are fast becoming a commonplace reality in cities, and the reason therefor is none other than the now nearly universal out-door-play tendency of the age. To foresee the vast evolutional import of this tendency to coming generations requires no great measure of discernment.

How has it fared meantime with "the man with the hoe"? If we were to judge from the innumerable testimonials from rural dwellers as to the efficacy of patent nerve invigorators and dyspepsia annihilators, which appear in the daily and religious press with ever-increasing and exasperating frequency, we should say "not well." But this conclusion may be unjust. It may be affirmed, however, without fear of cavil that for some good reason—bad cooking, monotony of occupation, lack of intellectual intercourse with the outside world or what not—the round and ruddy farmer, with his ample-bosomed spouse and freckled offspring, is about as scarce nowadays as the dodo.

ECHOES AND NEWS.

NEW YORK.

Illness of Dr. Sayre.—It is reported that Dr. Reginald H. Sayre is sick with typhoid fever.

Poisoning by Fly Paper.—A case of poisoning due to the licking of fly paper is reported by the daily press as having occurred at Matamoras, N. Y., in a young child. The main symptom observed was convulsions.

Plague Serum from Paris.—When the bubonic plague appeared in Glasgow, Dr. A. H. Doty, health officer of the Port of New York, ordered a quantity of plague serum from the Pasteur Institute, at Paris, as a precautionary measure for use at Quarantine in the event of the plague being brought to this country. The serum arrived some days ago and is now in the Quarantine Laboratory.

Unique Cause of Insanity.—An autopsy performed at Bellevue this week on a man who had

developed insanity within a comparatively recent time, revealed two bullets, one within the cranial cavity. The history of the case showed that he had probably tried to commit suicide, but had failed in the attempt, and had developed an insanity as the result of the traumatism.

Razorless Shave Damages.—As the result of using a patent remedy advertised to take off the hair without the use of a razor, a citizen of this city not only lost his beard, but a large amount of the skin of his face. He is suing for $2000 damages. The preparation is probably one of the many combinations of arsenic and potash.

New York Obstetrical Society.—At the annual meeting of this Society held Tuesday, October 9, 1900, the following officers were elected for the ensuing year: President, H. J. Boldt, M.D.; First Vice-President, Ralph Waldo, M.D.; Second Vice-President, H. N. Vineberg, M.D.; Recording Secretary, G. L. Brodhead, M.D.; Assistant Recording Secretary, G. G. Ward, Jr., M.D.; Corresponding Secretary, E. E. Tull, M.D.; Treasurer, J. Lee Morrill, M.D., and Pathologist, W. S. Stone, M.D.

Obituary.—Dr. Franklin Smith, seventy-six years old, died at his home, 366 Broome Street, one Tuesday night, October 9, 1900, after a short illness. He was born in this State, and for over a quarter of a century had been a resident of this city. He was a graduate of the Medical Department of the New York University, and for twenty years was a school trustee in the Fourteenth Ward.

Dr. William R. Larkin died October 15th from apoplexy, after an illness of ten days, at his home, No. 328 St. Nicholas Avenue. He was forty-two years old and a graduate of Bellevue Hospital Medical College. He was one of the founders of the J. Hood Wright Hospital and a surgeon to the New York Fire Department for several years. A widow survives him.

Dispute Over Consumption Hospital Site.—At a joint meeting of the State Forest Preserve Board and the State Board of Health held in Albany, October 11th, to consider the Big Lake Clear site chosen by the hospital trustees, a number of arguments were heard pro and con. Many citizens who owned cottages in the lake region objected on the ground that it would work unnecessary injury to the large number of visitors who yearly spend their summer holidays in the Adirondacks. Such an institution, located in such a region, could not help but prove an offense to the large classes in the vicinity and injurious to the vested interests of many.

Adirondack Tuberculosis Hospital.—In an able letter to the *New York Times* Dr. Eugene Hodenpyl of this city defends the action of the trustees of the New York State Hospital for Consumptives in choosing the site they have in the Adirondacks. He says: "The principal objection to this site, it appears, is on the ground that the fogs, mists, and dampness from the lake would be injurious to consumptives. This would apply equally to almost every part of the Adirondacks. The amount of rainfall in the North Woods is greater than in other parts of the State, and the region is so abundantly supplied by lakes and streams that fogs and mists in the early mornings during certain seasons of the year are of common occurrence. It is in this very region that so many consumptives, rich and poor alike, on the advice of physicians, have sought for and often have regained their health. It is the consensus of opinion of physicians who have practised in the Adirondacks that the amount of dampness which obtains in this region is not detrimental to the health of consumptives. Pneumonia is seldom observed, and diseases commonly ascribed as being due to exposure to wet are less frequent than in many other parts of the State. The camps which are so frequently occupied by consumptives are almost invariably located on the banks of a lake. In fine, then, the trustees propose to locate their hospital in a region which for years has been regarded as a favorable one for consumptives, and where experience has demonstrated that the results obtained in properly selected cases compare favorably with those of almost any other climate in the world. Objection has been made, too, on the ground of expense of the proposed site. Doubtless other sites could have been bought for less money. It must be remembered, however, that a site suitable for the hospital must possess many advantages; and from what I know of the value of Adirondack property that which possesses many advantages can no longer be picked up for a trifle. Finally, the site has been objected to by some on account of its proximity to some of the summer camps and hotels! Lake Clear is three miles from Saranac Inn, on the Upper Saranac Lake, and is two miles in an air line through the woods from Upper St. Regis Lake, and is over five miles from that lake by road. There is abundant proof to show that at this distance there is not the slightest ground for apprehension on the score of possible infection of the inhabitants of these places. Again, it seems to me, that the proposed site is sufficiently removed from the homes of summer residents, so that no reasonable objection can be made that the institution may detract from the attractiveness and value of property. Indeed, I was told last summer by one of the trustees that no site would be considered which was liable to offend in any way surrounding property-owners. A number of otherwise desirable sites were condemned for this reason alone. The trustees have examined personally almost every possible site in the Adirondacks, spending a good deal of time in so doing. Politics, the schemes of individuals with land to sell, etc., had no place in this board. For my part, I believe they have acted wisely, and that, instead of criticising the State, the poor consumptive and the neighboring property-owner have good reason to commend the work already

accomplished for the New York State Hospital for Consumptives."

PHILADELPHIA.

Medico-Chirurgical College.—A complete change of policy and business management is to take place at this institution. Hon. E. M. Paxson, ex-Chief Justice of the Supreme Court of Pennsylvania, has been elected president. The majority of the board of trustees have been members of the faculty heretofore, but these are to be supplanted by laymen.

Rumored Gift to University.—It is stated that Mrs. Mitchell, wife of Dr. Weir Mitchell, is to give to the University a memorial of her daughter in the shape of an addition to the hospital, or of a separate building, for the treatment of contagious diseases. It is hoped the rumor is true, as Philadelphia is greatly in need of a pay hospital for contagious diseases. An institution has been chartered, but the opposition of citizens to the location of a building, as well as lack of funds, has prevented its further action.

Aseptic Ether Inhaler.—At a meeting of the County Medical Society October 10th Dr. Ernest La Place exhibited an appliance for the administration of ether which he has used for two years with great satisfaction. It consists of an ovoid metal cup with an inner covering of wire gauze, a pad of sterile gauze being placed between the two each time it is used, the holder having been boiled to render it sterile. A crucial opening in the metal allows the pouring of ether upon the gauze and a slight trough catches any overflow.

Hahnemann College.—Dr. Pemberton Dudley, Dean of the College, recently read a paper upon the present diminution in the mortality-rate of the city and its causes. He ascribes it mainly to the fact that the law takes cognizance of the sanitary condition of the people. The suppression of tuberculosis in dairy herds and the persistent teaching of the contagiousness of tuberculosis are having their effect. The more general employment of disinfection in communicable diseases and a better attention to personal hygiene are also important factors.

A Live Hospital.—The Children's Hospital of Germantown, although in existence but little more than one month, has opened a training school for nurses. It is the only absolutely free hospital of the kind in Philadelphia.

Mysterious Inmate of Almshouse.—A young man who is deaf and dumb and can neither read nor write has been at the Almshouse since August 3d, when he was picked up on the street penniless. From a baggage check in his possession and from a rude map which he draws the superintendent believes the man is from Virginia.

Health of the City.—The death-rate continues very low, diphtheria being the only contagious disease at all prevalent. The chief of the Bureau of Health, in order to maintain this desirable condition of affairs, is sending circulars to every physician in the city stating the rules regarding contagious diseases and urging their literal compliance with the same.

School Physicians.—The School Board is considering a resolution requesting Councils to make an appropriation for paying visiting physicians to the schools a yearly salary of $100 each. This is less than was supposed to be paid when the act making provision for such services went into effect. An appropriation for this purpose has never been secured, hence the resolution.

Philadelphia Hospital.—Drs. Simon Flexner and Joseph McFarland have been appointed pathologists to succeed Dr. H. W. Cattell, resigned. No one can be elected visiting physician unless he promises to give ward instructions or clinical teaching to students. This is in furtherance of the plan to utilize for teaching purposes the vast amount of material at the Almshouse.

CHICAGO.

The Chicago Eye, Ear, Nose and Throat College.—The capital stock of this College has been increased from $10,000 to $25,000, and its directors from three to five.

College of Physicians and Surgeons.—The opening exercises were held October 1st, the opening address being delivered by Dr. Robert H. Babcock.

Woman's Medical College.—The thirty-first annual session was opened October 1st, at which time addresses were delivered by Professors William E. Schroeder and Leonard L. Skelton.

The Cottage Hospital.—This institution was one of the first of its kind in the State. It is to have a new main building, which will be erected and equipped in accordance with modern ideas. The capacity of the group of buildings composing the hospital will be about 150 beds.

Meeting of State Board of Health.—The Board recently held its quarterly meeting. A report prepared by the State Bacteriologist was read, which maintained that the water has not been contaminated by the drainage canal. The report proves that St. Louis is not justified in its complaints against the drainage canal. The prevalence of diphtheria in many places in the State was especially considered, and in the opinion of the Board the spread of the disease, in the majority of cases at least, has been due to a lack of recognition of the malady. The Board concluded to carry the case which it instituted against Dr. W. Frank Cross to the State Supreme Court. The defendant is charged with unprofessional conduct for his connection with the so-called National College of Hygiene and the Independent Medical College.

Experimental Psychology and Criminology.—Miss Frances Kellor, of the University of Chicago, has a pet theory that criminality and heredity have nothing to do with each other, but holds that all criminal tendencies result from early home training and subsequent environment. With the difference between the criminal and the normal man established, she believes that by improving legislation criminality can be checked and the criminal reclaimed. She has fitted out a laboratory at the University of Chicago, and her investigations will include hard students, "flunkers," athletes, and society leaders. She says that by "anthropometric measurements of the face, head and body, and observations on cranial development and defects, it is found that members of the same family differ greatly, according to occupation and surroundings. Under the influences of education and culture, the head and body are found to change their shape, while a lack of all these, combined with dissipation, produces the physical characteristics of the criminal. Psychological tests show that in the senses, emotions and intellect, the criminal varies distinctly from the normal man. These are simply the means through which a man responds to his environment. Social conditions have the greatest influence."

GENERAL.

Marriage Reform.—The Tri-State Medical Society of Tennessee, Alabama and Georgia, at its recent annual meeting held last week, took steps to secure medical legislation in those three States for the purpose of regulating or prohibiting the marriage of habitual criminals, persons afflicted with incurable diseases, drunkards, and victims of harmful drugs.

Plague at Glasgow Checked.—All of the plague suspects have been dismissed, but twenty plague cases remain in the hospital at Glasgow. An official bulletin, dated Thursday, October 11th, says: "The outbreak has been completely checked. Twenty-one days have elapsed since the last case. The reception houses will be closed to-day."

British Steamer Carries Plague.—The British steamer "Highland Prince," from Antwerp August 30th, London September 7th, and Bahia October 4th, arrived at Montevideo October 14th with bubonic plague on board. Five deaths, including the captain and first officer, occurred during the voyage.

Study of Carcinoma in Germany.—The Committee for the Advancement of the Study of Carcinoma in Prussia is now distributing the lists of questions and other prints relating to the subject of its activity throughout the German Empire. The replies are to be returned during the current month and later collected.

Dr. Loew Goes to Japan.—Dr. Oscar Loew, for two years past connected with the Agricultural Department as expert in physiological chemistry, has resigned to accept a position as lecturer in the Agricultural College of the Imperial University at Tokio, Japan.

Jewish Consumptives' Home.—The Executive Committee of the Second District Grand Lodge of the B'nai B'rith met October 14th in Cincinnati to elect trustees for the new Home for Consumptives at Denver, Col. Twenty-nine trustees were elected for one year, among them being the following: Martin A. Marks, Cleveland; Edward Kolish, Richmond, Va.; Samuel Heavenrich, Detroit; A. Abraham, Brooklyn; Joseph Miller, Baltimore; Max Bamberger, Philadelphia; Hannah Beinstein and Emanuel Lehman, New York; Solomon Ginsberg, Buffalo, and Philip Hamburger, Pittsburg.

The Shah of Persia and Doctors.—The Shah of Persia while in Budapest consulted an eminent specialist and was informed that he was affected with heart trouble and that the condition of his kidneys would grow serious unless strict dieting was observed. The Shah remarked that he had consulted four doctors in France, three in England, several in Austria and one in Germany, and that not one of them had told him the truth as to his condition.

Brain-Jar of Military Step.—Dr. Colin, regimental physician in the French army, has published in *Health* the results of his investigations into the effects of regular marching in disciplined bodies upon soldiers. The regularity of the step causes the indefinite repetition of a shock of the bones and brain, infinitely more deleterious than an irregular walk, and to this regular repetition of the shock of the same parts of the body is due the peculiar aches, pains and illness of the troops. Dr. Colin's preventive is a rubber heel in all military boots. This heel has been tried at his instance in the French infantry, he says, and the result has been found to be a great relief to the soldiers.

Doctors' Contracts.—A reputable physician and surgeon residing and practising in the Province of Quebec made a contract to render professional services in one of the United States whose laws debarred him from engaging in the practice of medicine there. The contract was broken by the other party to it, and the doctor brought a suit against him in the Canadian courts to recover the value of the work which he had done under the agreement. The defendant interposed a defence setting up the illegality of the contract, as being an undertaking on the part of the plaintiff to practise medicine and surgery in a foreign State where it was unlawful for him to practise. This defence has finally proved successful, the court holding that no compensation is recoverable upon a contract of this character, which is pronounced illegal.

Obituary.—Dr. Benjamin Hussey West, one of the old graduates of Harvard University, died at Neponset, Mass., on Thursday, October 11,

1900. He was born in Nantucket, November 10, 1814, and was the son of Paul West, a lieutenant in the British Navy and commander of the ship "Cyrus." He graduated from Harvard in 1835 in the class with the late Bishop Williams of Connecticut, Judge E. R. Hoar, Amos A. Lawrence, John A. King and others who have been prominent in public life. Only five survivors of the class remain. He was graduated from the Harvard Medical School in 1838 and commenced professional life at Pawtucket. In the early '40s he went to California, where he remained for several years, being a member of the Committee of Safety during 1849. Later he was for many years head surgeon of the Pacific Mail Steamship Company.

Dr. Joseph L. Cutler, for fifty years one of the leading surgeons of Allegany County, died October 12th in Bolivar, N. Y., of uremic poisoning, at the age of seventy-one years. He was born in Moravia, N. Y., graduated from the University of New York in 1850, and the same year located in Bolivar. He served ten months as assistant surgeon of the 134th Regiment New York Infantry during the Civil War. He earned his money to attend college by teaching , and among his pupils at Moravia was John D. Rockefeller, the Standard Oil king, whose first teacher Dr. Cutler was. Dr. Cutler leaves a widow and two daughters.

Medical Course at Bowdoin.—On the recommendation of the faculty of Bowdoin College the Board of Overseers, at its last annual meeting, voted that the work in the first year of the Medical School in physiology and anatomy should be allowed to count as four courses each toward the degree of A.B. in the college. Conversely, work in the college in chemistry and biology will, without doubt, soon be allowed to count as courses in the Medical School. Although this movement is in line with the three years' degree agitation in the universities, it is noteworthy in the policy of Bowdoin. When, a year ago, the course in the Medical School of Maine was lengthened to four years, it was soon found that a combination of the academical and medical courses must be so arranged as to offer completion in seven years.

Non-Medical View of Carlsbad.—Clyde Fitch, the playwright, says of Carlsbad: "If any one ever writes a play at that place it will be on the order of one of the gloomy old mystical German tragedies. If ever there was a place saturated with deadly monotony and unmixed gloom it is Carlsbad. You are routed out of bed at 6 A. M., and wander with a funereal crowd to the springs. This cheerful mob is made up of sallow-faced men and women ever wearing a small glass hung by a strap. The conversation is redolent of medicine. At nine o'clock is breakfast. This repast consists of two thin pieces of meat and two thinner pieces of stale bread. Then the entire crowd climb a series of hills under orders until luncheon, when one gets a piece of steak and a few mouthfuls of one kind of vegetable. Then the same old hills are tackled again, only with less determination, and, with a little lolling about and more mutual diagnoses, the time wears around to a frugal dinner. Later on everybody gets a massage bath and goes to bed. Next day same old water, same old hills, and same old food. It is beneficial, but the remedy is almost as bad as the disease."

Patent Medicine Ethics.—At the meeting in Aachen of the Society for the Advancement of the Natural Sciences, H. His, Jr., advanced the following points regarding the endorsement by physicians of newly-discovered medicaments. (1) The relations between the manufacturers of and the endorsers for pharmacological and medical products ought to be adjusted and regulated by some central institution. (2) The signing and endorsing of such products should be for the personal information and benefit of the manufacturer, but never for publication by him. (3) Physicians should never recommend in the public lay prints newly-discovered medical products or food preparations. (4) There should be greater conservatism in the matter of subscribing to the merits of a new drug, and the publishing of such endorsement should be reserved exclusively to the technical publications and medical press. (5) The articles appearing in the medical journals should be protected as far as possible against reprint for purposes of advertisement. (6) To demand or receive pecuniary benefits from signatures, recommendations, endorsements or publications regarding new preparations is inadmissible. (7) Physicians whose inventions are set up for sale are responsible for the manner of advertising them.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, October 6, 1900.

THE OUTBREAK OF PLAGUE IN GLASGOW—LIMITATION OF THE CASES—GOOD RESULTS FROM YERSIN'S SERUM—PRECAUTIONS AGAINST SPREAD OF THE DISEASE BY RATS—THE SOUTH AFRICAN HOSPITAL COMMISSION—EVIDENCE OF LORD KITCHENER—INSANITY IN ENGLAND.

There are now in hospital in Glasgow 24 cases of plague and 2 doubtful cases, and 88 persons are under observation. So far 6 deaths have occurred since the beginning of the outbreak a month ago. Thus it will be seen that the outbreak shows little tendency to spread. Yersin's antiplague serum has been used in the treatment with apparently great benefit. For example, a man acutely ill came under observation in the early stage. The bubo was in the axilla. Forty cc. of serum were injected, half intravenously, half subcutaneously, with the result that the temperature fell 4° F. in six hours, the swelling and tenderness round the bubo were

greatly reduced and in the course of the day passed away. Two days later the patient felt almost well and the pain in the bubo had disappeared. In another case, a man was admitted to hospital on September 9th. He had suffered for a week from headache and malaise until September 8th, when he had a rigor and sickness. He was unconscious and had a temperature of 105.8° F. In the left axilla was a group of enlarged and acutely tender glands. Twenty cc. of serum were injected into one of the brachial veins and a like quantity into the subcutaneous tissue of the abdomen. After six hours there was slight perspiration and the temperature had fallen 4° F. The pain in the axilla and the edema were less. On the following day the temperature was 100° F. and the patient felt quite well and desired to get up. Elaborate precautions have been taken against the spread of the plague by rats. At Liverpool printed instructions have been issued to the masters of all vessels trading with Glasgow. Care is to be taken that rats are prevented from boarding the vessel while in dock at Glasgow, for this purpose a man must be stationed at each gangway and beat off any rodent that evinces a desire to come to Liverpool. Should, however, a rat succeed in taking the sea trip he will find fresh difficulties confronting him at Liverpool. A man stands guard here, too, at the gangway. A number of corrugated iron sheaths are supplied for fastening round the mooring ropes so that a rat who attempts to traverse these may lose his footing and fall into the water.

The Hospital Commission has continued its sittings at Johannesburg. Lord Kitchener declared that the cutting down of the hospital transport under the order of January 29th was absolutely necessary in order to quickly relieve Kimberley. Everything was cut down. The problem was, What could be carried with the available mules? The personnel of the field hospital was not cut down and worked well. He deprecated placing transport altogether under the charge of field hospitals and confirmed Lord Roberts' evidence with regard to the supplies brought to Bloemfontein; 1680 tons of medical stores were brought up—all that was possible under the circumstances. The activity of the enemy necessitated the troops being sent out, the field hospitals had to be emptied to accompany them, causing overcrowding. Surgeon-General Stevenson explained that the men had to lie in the field hospitals in their khaki uniforms as no provision was made for supplying the field hospitals with clothes. In Bloemfontein every building was taken which was capable of being worked by the personnel. He admitted that in Kroonstadt and Pretoria there was shortness of utensils, milk, bedding, etc. He had permission from Lord Roberts to purchase everything obtainable and he spent thousands of pounds. At Pietermaritzburg another sitting was held. Mr. Bale, Attorney-General of Natal and Chairman of the Association for the Relief of the Sick and Wounded, stated that he had visited all the hospitals and noticed nothing to cause complaint. He had heard that Fort Napier Hospital was unsuitable, as it was infested with vermin. He admitted that there was too much red tape. Sir William Stokes had told him that too much attention was paid to organization. Dr. Max Blieden, formerly civil surgeon in Fort Napier Hospital, said that the barracks there were full of nests of vermin. These insects were found under the patient's splints and some men suffered terribly therefrom. One enteric patient in delirium ran away saying he could not stand them. There was insufficiency of fresh milk and clean linen. The condition of the wards was sometimes scandalous. The orderlies were too few and some of them stole liquor intended for the patients.

At the annual meeting of the North Midland District Poor Conference Dr. J. M. Rhodes read a paper on "The Increase in the Numbers of the Certified Insane and the Necessity of Making Provision for Them." He said there were in England upward of 100,000 people who were legally declared of unsound mind—nearly double the number in 1869. It had been said that the rush and pressure of business is to-day so severe that there is a large increase in nervous diseases. But the Registrar-General's returns show that the ratio of deaths from nervous diseases has steadily diminished. It is true that the mortality from insanity and general paralysis of the insane has risen during the last twenty years from 68 to 114 per million, but against this may be set the fact that the deaths from the next most fatal nervous disease, epilepsy, have fallen from 117 to 85. The returns for the last ten years show that the number of pauper lunatics has been increasing by more than 2000 per annum; last year it was nearly 3000. But these figures cannot be taken as proving such a great increase of insanity. The system pursued in reference to the insane has changed. For the last twenty years there has been a growing confidence in the authorities, and consequently an increase in the number of insane placed under the control of the state. The percentage residing with relatives had fallen from 18.46 to 6.23.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

PARALYSIS OF THE FIFTH AND SEVENTH CRANIAL NERVES—INTERMITTENT ORBITAL VARICES—TUMORS OF THE BASE OF THE SKULL—FRACTURES OF THE ASTRAGALUS AND TIBIA—PYLORECTOMY FOR NEOPLASM—ULCERATIONS OF THE CECUM—RADIOGRAPHS OF THE RESULTS OF TARSOCLASIS—FOREIGN BODY IN THE PRIMARY BRONCHI—OLD DISLOCATION OF THE HIP—ADHERENT UTERINE RETROVERSION—CANCER AND QUININE—CONGENITAL DISLOCATION OF THE HIP.

Gayet, at the Société de Chirurgie de Lyon, June 7, 1900, presented a patient from his service whose history may be epitomized as follows:

First attack of suppurative otitis media about two years ago; second invasion of the disease three months ago; after this second attack occurred a simultaneous paralysis of the right trigeminus and lower segments of the right facial nerves, with insensibility of the mucosæ and skin supplied by the fifth nerve, paresis of the masticator muscles of that side, neuroparalytic keratitis, paralysis of all the muscles innervated by the right facial nerve except the orbicularis which was only paretic to a small degree, and deviation of the uvula and the tongue to the opposite side. The interest of the case lies in its pathogenesis. The cause was evidently suppuration in the middle ear with extension to the nerves directly, but no satisfactory explanation can be advanced as to why only the inferior segments of the facial should have suffered.

Vincent said he had seen a similar case which he would later report.

Ruotte narrated the history of a twenty-nine-year-old gardener suffering from the following symptoms of intermittent exophthalmos of six months' duration. Each time he would stoop the eye would undergo enlargement, projection forward with obliteration of the sulcus between the globe and the superior and inferior orbital margins, and with bluish soft tumefaction of all the adjoining skin. Pressure on the jugular vein reproduced an analogous condition. The ophthalmoscope showed the veins of the fundus to be slightly enlarged. The condition was evidently orbital varicosities which might have been produced by the patient's profession. If the condition increased operative interference would be necessary.

Gayet had seen several examples of the same trouble. One of his patients had sustained a fracture of the base of the skull. Large varicosities of fundus developed but vision had not suffered thereby.

Vincent at the session of June 14th related the facts of a tumor of the base of the skull apparently springing from the antrum of Highmore without in the least affecting the nasal cavity, compromising the optic nerve of that side and filling the zygomatic fossa. It was removed by partial resection of the superior maxilla, accompanied by a very vigorous hemorrhage supposedly from the cavernous sinus, stopped by packing. Complete cure followed. Histologically the growth was a very vascular fibroma.

Ollier observed that such active bleeding need not involve opening a large trunk like the sinus. Vascular polypi, such as these tumors really are, bleed at the least touch. Tamponade always checks such hemorrhage in his experience. The ordinary source of these growths is the basilar apophysis, but there are many exceptions. The best, most direct and commodious access to them is gained by vertical osteotomy with plugging of the nose. Hemorrhage is then in full view and readily commanded.

Destot exhibited radiographs and contributed an observation of a cavalryman who was thrown from his horse and landed on both feet. He was unable to walk and was taken in the hospital, where he was kept at rest for three months. Radioscopy showed a fracture of the astragalus and a wedge-shaped fracture of the lower end of the tibia behind it.

Vallas stated that in bimalleolar fractures the third or tibial fragment is always due to tearing, according to Tillaux. This contribution showed that another force may operate, namely, direct pressure upward upon the tibia by the astragalus.

Rochet added that in experimental fractures he had often produced cuneiform fragments in the tibia by violence directly in the line of the limb.

A. Pollosson at the meeting held June 21st brought forward a twenty-four-year-old female upon whom he had performed pylorectomy for neoplasm which was situated in the neighborhood of the pylorus and epitheliomatous in type, with three small ganglia in the lesser omentum which had to be removed. The noteworthy point is the youth of the patient who had already been three times pregnant. Not long ago he introduced another young woman who having had four children suffered from a cancer of the uterus. The query is whether oft-repeated impregnation in the young may not tend to excite cancer. Statistics show that patients in the condition of this woman with pyloric cancer rarely live three months. Since she had exceeded this he felt the operation had been of benefit, although recurrence or metastasis was almost certain.

Vincent described ulcerations of the large intestine near the cecum which caused localized abscess and peritonitis without appendicular lesion except a little swelling. The child died without vomiting and with hypothermia. These facts deserve comparison with those evolved by Ollier and Moré-Josserand, who found that such abscesses often occur not as part of an appendicitis but as the result of perforating ulcers, whose source is in dispute, but which often resemble tuberculosis.

Vallas recalled a case where in the presence of a moderate appendicitis a perforating ulcer of the adjoining cecum was apparent, explained no doubt by a double and extensive infection of both the cecum and the appendix. When the course of such conditions is rapid and virulent, tuberculosis is scarcely to be thought of, because it usually attacks large areas of the bowel and proceeds slowly. Vincent's case appeared to have died of superacute peritonitis such as gives no vomiting and no typical signs of the disease.

Polosson raised the point that even in the case of Vincent the appendix could not have been normal because the extremity was enlarged. He recalled a patient of his, about sixty-five years old, who during the first ten days of a mild attack of probable appendicitis seemed perfectly well. Suddenly he passed by rectum a large quantity of bright blood. Recovery followed. Perhaps this bleeding was due to these cecal ulcers.

Vincent closed by saying that histologically the appendix was normal, which proved to his mind that such ulcers of the cecum occur as an independent pathological fact.

Radiographs were shown by Vincent of old operative cases for clubfoot by tarsoclasis. They justified his methods which had been characterized as brutal and barbarous. The function of these feet were still good after respectively five, seven, ten and eleven years since the operation. The photographs showed that he had produced fractures and subluxations about the astragalus and toward the dorsum of the foot. The observations will be published presently *in extenso*.

Goulliod at the meeting of June 28th described a case in which a twenty-month-old child had inspired a nail. Through a tracheotomy wound a strong electromagnet was introduced and the nail removed. It was seen to jump from the right primary bronchus where radioscopy had shown it to be to the poles of the magnet. It measured two inches.

The same author presented a case of iliac luxation of the hip unreduced for four months. Under anesthesia several futile attempts were made to reduce the dislocation by the ordinary flexion and abduction methods. Finally the forced abduction method of Lorenz was successful. After a three-weeks' immobilization in Bonnet's gutter splints recurrence was found. Reduction was again done in the same way and after careful and more prolonged immobilition the joint remained intact and good function returned.

Ollier said that authors give too dark a prognosis in dislocation of the hip. Not only are they reducible after several weeks but also after several months. He had returned the head of the bone to its socket eight months after its dislocation and obtained good function. In such cases very likely the head is only partially replaced, but the rule is for the resulting function to be far better than would be the outcome of a resection of the head.

Vallas pointed out sepsis as the great difficulty in the way of opening operations for the reduction of old dislocations. He therefore advised forcible reduction in all cases as a preliminary procedure. In a patient sixty-seven years old he had fractured the neck of the femur in an attempt to replace the bone. The net result was a much improved though not normal gait.

Durand had one failure at forced reduction which of itself passed from a pubic to an iliac type. This was the second case of the same thing he had had with a creditable result and good function in each.

Ollier enforced the utility of these powerful manipulations for tearing down adhesions, elongating the contractured muscles and ameliorating the position of the head. One may add to these baths, continuous traction and massage, and not resort to bloody operations except when nerves and vessels are evidently compressed, and give symptoms.

Fochier introduced a young woman who after an abortion four years ago had suffered from pelvic inflammation and then retroversion of the uterus with adhesions. She had subjected herself to various kinds of treatment for this condition, massage and seances of columnization, etc., without overcoming the displacement or getting rid of the pain. At the laparotomy it was apparent that the adhesions obliterated the cul-de-sac of Douglas and that the massage had simply elongated the adhesions, producing a mobility of the organ and no more. The operation consisted merely in tearing away the adhesions, freeing the womb and ablating the left appendage which was inflamed. The cul-de-sac of Douglas was also restored. This case shows the probable futility in trying to restore this pouch by massage. When adhesions are extensive the uterus is merely moved until they are rendered long enough to make the pain of traction less, but the cellular tissue is simply elevated into a pointed arch while the obliterated pouch of Douglas is not changed. The retroversion as such is not cured but may be made much less painful.

Goullioud thought that mere displacement of the uterus is not the cause of the pain, so much as the displacements and tractions by adhesions on the appendages.

Jaboulay on July 5th presented a patient who after a traumatism noted a tumor develop in her left breast; after ten months the skin was adherent, invaded, and at the end of last June presented the appearances of threatened ulceration, being red and glossy. The treatment was injections of quinine since the end of the month of June. The tumor had decreased to about one-third its former size, the skin had become loosened and wrinkled and enlargements of the axillary ganglia had disappeared.

Fochier called attention to the fact that a neoplasm at the periphery of the breast is rare, but from the description this one was probably a sarcoma of the skin.

Jaboulay said that the involved axillary nodes argued against sarcoma. Whatever the histology might be the recession of the mass had nevertheless occurred.

Nore-Josserand presented to the society and described a specimen of the pelvis and hip-joints of a child on whom he had operated for congenital dislocation of the hip according to the method of Lorenz four months before it died of pneumonia and at that time exhibited to the Society. Radiographs of the conditions before operation were also at hand. The dissection showed that the muscular insertions were normal but that the muscle bellies were irregularly atrophied. The adductor magnus had been lacerated by the reduction and was the most atrophied. The pelvi-trochanteric group was also very degenerated, while the glutei appeared normal. The articulation showed these features: The socket was quite comparable to the other side; the femoral head had advanced forward considerably; the two capsules were practically nor-

mal as were also the ligaments of Bertin; undue freedom of external, marked restriction of internal rotation were present.

Fochier expressed surprise at the difficulty of diagnosis between infantile paralysis with hip dislocation and congenital dislocation of that joint and asked whether the former disease had been ruled out.

Nore-Josserand said that he had ruled out infantile paralysis on account of the good function during the four months preceding death and of the general condition of the other muscles.

SOCIETY PROCEEDINGS.

NEW YORK STATE MEDICAL ASSOCIATION.

Seventeenth Annual Meeting, Held at the New York Academy of Medicine, New York City, October 15, 16, 17 and 18, 1900.

The first day's session was taken up by the usual business meeting of the Association.

Second Day—October 16th.

Muscular Rheumatism and Electricity.—Dr. James Grant of Ottawa, Canada, was presented to the Association and detailed the results of thirty-five years' experience with muscular rheumatism. He concludes that it is due to the accumulation in the body, not of urea, but of abnormal electricity. This theory is confirmed by success in the treatment of the disease. If ordinary needles are inserted into the rigid muscles affected by lumbago, or pleurodynia or torticollis this abnormal electricity is conducted off and the muscles become pliant and painless. If, when these needles are first inserted, they are connected with a sensitive electrometer the needle is sensibly deflected. On a second insertion after a few minutes no deflection is noted. The needles are left in place only a few minutes.

Nervous and Electric Conductability.—Dr. A. D. Rockwell of New York called attention to the striking analogy that exists between certain electric phenomena and nervous phenomena. Since the announcement of the neuron doctrine, this analogy has become even closer than before. The conditions that make a tube of iron filings a good conductor, though a moment before it was not, are strikingly similar to those which obtain in nervous conduction. As electric conductability is disturbed by untoward conditions, so nervous conduction is disturbed in hysterical states, in paresthesia, in mental confusion, and the like. Certain of these neurotic conditions promptly disappear under electricity. This might be expected from the analogy cited. That which is needed is detailed study of the relations between high-tension and high-frequency electrical fields and abnormal nervous conditions. In electricity is to be found the best agent for the treatment of these trying and obstinate states, and the future is bright for advance in these lines.

Cocainism.—Dr. T. D. Crothers of Hartford, Conn., said that cocaine is now sold freely at drug-stores and grocery-stores and even by tramp pedlars, so that its habitual use is becoming much more common than it was. Dentists, druggists, eye specialists, and throat and nose specialists have been the victims of the habit up to this. Now it is spreading among the lower orders. Habitués, when they cannot obtain it otherwise, steal to get it. When deprived of it in prison they become delirious, even violent. A number of cold and catarrh remedies contain cocaine in such quantities as to be dangerous. In a mill town in Connecticut, where the mill operatives suffer from dust, over 100 people were found to be taking a strong cocaine preparation.

Symptoms of Cocainism.—Many of the symptoms are deceptive. Some of them resemble those of paresis and occasionally such patients find their way to insane asylums. A certain diffuseness of speech is a characteristic of cocaine victims. Clergymen preach too long sermons. Lawyers wander in pleas. Medical professors wander from the point. Hallucinations of persecution especially are frequent. Most cocaine victims carry concealed weapons. The treatment is immediate withdrawal of the cocaine. Bromides often help the symptoms that result. Patients should as a rule be sent away from home for cure.

Points in Heart Diseases.—Dr. James J. Walsh of New York read a paper on some practical points from the discussion on heart diseases at the last International Medical Congress. According to the statements of a number of good observers, valvular lesions of the heart are not so absolutely incurable as they have usually been considered. Petrowich reported a series of cases in which the heart lesion had existed for some time and gave constitutional symptoms as well as physical signs, and yet under a course of small doses of the iodides and precordial applications of the actual cautery the lesions disappeared. The treatment must be kept up for at least a year and in one case it was three years before the cure was complete. Professor Potain said that in young people such a course of treatment should always be carried out and that cures are not infrequent.

Painful Heart Conditions.—For the cardiac discomfort which often accompanies arhythmia a number of observers insisted that, while digitalis very seldom does good and often seems to do positive harm, strophanthus acts very satisfactorily. One of the most prominent of French heart specialists insisted that strophanthus is the ideal heart tonic to use whenever a painful cardiac affection is present. It soothes the pain even though it may fail to correct the disturbed rhythm. While it was agreed that the most prominent cause of heart disease is rheumatism, doubt was expressed as to whether the cardiac lesion is always due directly to the specific cause of the rheumatism or is not still more frequently due to a secondary infection occurring as a com-

plication of the rheumatism. Rheumatic conditions seem to predispose individuals to easy invasion by various micro-organisms. A number of germs have been described as occurring in valvular rheumatic vegetations. Our present knowledge in the matter emphasizes the necessity for the most careful antisepsis of the digestive tract during the course of a rheumatism, for from here secondary infections occur. Tobacco as a factor in the production of heart diseases is attracting more and more attention. A number of cases were reported in excessive smokers in which all the other ordinary causes of heart disease had been carefully excluded. The frank conclusion was that, in susceptible individuals when used to excess, tobacco alone can produce sclerotic conditions in the arteries and heart itself which finally give the physical signs and the functional symptoms of an organic heart lesion. Heredity as a factor in heart diseases also seems to be given more thought than heretofore. Not that direct heredity of an acquired characteristic is presumed, but that a certain lack of vital resistance in the heart seems to be a feature of the physical constitution of certain families.

Symposium on Obstetrics.

Management of the Prepuerperium.—Dr. Edward P. Davis of Philadelphia said that the most important thing to watch during the months immediately preceding labor was the urine. The amount of urine should be carefully noted from time to time, and for this it is well to give the patient explicit instructions that the urine of the whole twenty-four hours shall either be faithfully preserved or carefully measured. It is not sufficient to take the woman's assurance that she is passing as much urine as usual. After the amount of urine, its specific gravity is most important; then the sediment of the urine should be carefully examined. The character of the epithelial contents should be carefully noted and any debris indicating kidney disintegration taken into account. Of course, casts should be carefully looked for. Albumin is only of importance if in very large amounts, or if it is accompanied by other signs of kidney trouble. Blood in the urine is pathogenically significant. When sugar is found, if in the later months, it may be no more than lactose reabsorbed from the milk. In some women glycosuria indicates only a highly neurotic condition and is not pathognomonic of diabetes. It is being realized more and more in recent years that the liver is an important manufactory of many excretory products that afterward appear in the urine. The hepatic condition therefore should be carefully followed.

Diet in Pregnancy.—For the heartburn which is so common a complaint during pregnancy a limitation of the diet is perhaps the best remedy. Milk should be taken in considerable quantities and, if it causes any gastric discomfort, it may be mixed with Vichy or some other carbonated water. As a rule, meat should not be taken more than once a day. It must be borne in mind that coffee and tea check excretion and their use in any quantities during pregnancy should be discouraged. Many a nervous symptom or complaint of pain will disappear if coffee and tea are not taken. On the other hand, there is danger in limiting the diet too much, for the woman's strength must be thoroughly preserved. Plenty of ripe fresh fruit should be taken, and if this cannot be obtained stewed fruit, or preserves not too sweet, or canned fruit. At least one quart of water should be taken a day internally, and, externally a cool sponge bath in the morning and a warm bath at night. For nervous restlessness and insomnia there is nothing more soothing. The pregnant woman should be a great deal in the open air and the house should be well aired.

Drugs.—For symptoms of toxemia salines should be employed—preferably those without potash. Calomel is the best stimulant of excretory processes that we have; 1/20 of a grain may be given night and morning, or 1/100 of a grain three times a day for weeks without producing any mercurial symptoms. Bromides should not be given, because they check eliminative processes and these should rather be encouraged. If hypnotics are necessary, chloral or one of its derivatives is the best. Muscular exercise is of importance. Perhaps the best form of exercise to develop the abdominal muscles is scrubbing on the knees, but from this most of our patients are precluded and walking remains the best general exercise. Compression of the abdomen by a tight bandage or support forces the child down into the pelvis, but weakens the abdominal muscles and sometimes does not give suitable opportunity for the accommodation of the fetal parts to the pelvis. If there is any discharge it should be treated very carefully before labor begins.

Normal Labor.—Dr. Austin Flint, Jr., of New York County said that the most important preparation for labor is to have the patient do considerable walking up to the time labor begins. This softens the lower segment and makes labor much easier. When the doctor is called he should after careful sterilization of the external parts of the woman and of his own hands make an examination that satisfies him as to the exact state of affairs. It is much better to make one good examination than a number of incomplete ones. After this the nurse should be given instructions to see that the patient empties her bladder every hour. An antepartum douche seems according to statistics to do harm rather than good. When the pains become severe, ether should be given in small amounts. This drug seems to be replacing chloroform to a great extent for this purpose. When the first stage of labor is approaching its end it is Dr. Flint's custom to help the dilatation of the cervix by digital manipulation if it seems to be proceeding too slowly. Of course, the bag of waters should be preserved as long as possible, especially in pri-

mipara. Many methods are suggested for the preservation of the perineum. The important thing is to discontinue dilatation by intervals of pressure and then of rest during which a restoration of the circulation takes place. The child's head is the best dilator. If it is being pressed down upon the perineum too rapidly an anesthetic may be employed. The application of the low forceps will help to save many a perineum. If the pains become slow, withdraw the anesthetic and stimulate. For this purpose alcohol should be given, but ergot should never be used. When the forceps are applied, traction should be made intermittently in imitation of Nature's method, so as to permit of a return of the circulation after pressure has been put on the muscles of the perineum. As soon as the head is born the mouth and eyes should be washed out. There is no need to insist upon this precaution with regard to the eyes. With regard to the mouth, however, this practice will be found to save the child many a morbid respiratory condition during the early days of life.

Third Stage of Labor.—The blood should be allowed to escape from the placenta, as this decreases its bulk and permits its expression sooner by the uterus. Any tears that occur in the genital tract should be repaired at once as far as possible. Careful examination of temperature charts of puerperal women will show that the cases in which there is no rise of temperature and no morbid symptoms are those in which there has been no laceration of the genital canal. This is very important, for the infective material growing in tears in the lower genital tract may very well prove the source of contagious material that will invade structures higher up and produce a general septic condition.

After-Treatment of Normal Labor.—Dr. George W. Jarman of New York County said that in women of lax fiber the uterus often presents a tendency to relaxation. Hemorrhage into the cavity of the uterus takes place as a consequence and proves not only weakening, but gives considerable trouble afterward because of the painful expulsion of clots. Where the uterus is not firmly contracted after the delivery of the placenta, the binder should not be put on for half an hour and the uterus should be rubbed through the abdominal wall. It is well to give a dose of ergot immediately after the delivery of the child. If the uterus does not contract firmly after these manipulations a hot intra-uterine injection may be given. The vulva should be kept covered by a rather thick pad of antiseptic cotton. As a rule the binder should be used, partly because of the prejudice in favor of its use as regards the preservation of the figure. The vulval pad should be changed very frequently during the first twelve hours. The child should be allowed to nurse as soon as it and its mother are washed and dressed. The nursing is good for the child and acts reflexly on the mother to produce a firm contraction of the uterus. Even in perfectly normal cases there will be sometimes a rise of one to two degrees in temperature as the result of the nervous excitement and fatigue. If the urine is slow to come, hot cloths should be placed on the abdomen. If necessary, a sterile glass catheter should be employed and the nurse should be instructed to pass it by sight under due precautions. After the third day the woman should be allowed to sit up in bed to urinate. In case nervous excitement causes insomnia sodium bromide may be used as a sedative. Until the bowels have been freely moved a liquid diet should be exclusively employed. If the bowels are not moved freely of themselves, a gentle laxative should be given from forty-eight to sixty hours after the labor. As good as any is the time-honored castor oil. It is to be remembered that coffee will lessen the milk secretion if it is excessive. If all women understood that mammary abscesses are not the result of cold or of caking, but always come from fissures of the nipples, much more care would be taken of the nipples and there would be many less mammary abscesses. The woman should be taught to lie on her side as much as possible as this more surely protects her from retroversion of the uterus. As to getting up it is not a question of days, but of conditions. As a rule after seven to eight days, if the patient is well, she may sit up in bed. A day or two later, when there is lochial discharge, she may be allowed to get up into a chair. If the red flow returns she must be put back to bed at once and must not be allowed to get up again for two or three days.

The Newborn Child.—Dr. Bernard Cohen of Erie County said that as soon as a child is born it should be placed on its right side in order to favor the closure of the foramen ovale. Its face should be turned from the vulva to avoid any gush of fluid, and it should not be placed too far away, in order to avoid traction on the cord. The cord should not be ligated at once, but as much as possible of the placental blood should be allowed to find its way into the child's circulation. If but a short stump of cord is left less material is present to dry up and there is less danger from manipulation. The mouth of the child should be cleansed with a piece of soft sterile rag on a clean finger. In dressing the child a tight band should not be put on. After the cord has dropped it would be well not to use the usual belly-band. It is supposed to prevent umbilical hernia, but in reality it favors it by weakening the abdominal muscles. Many nurses have the custom of giving the baby a little warm water in sugar. This serves as a gentle laxative and is as good as anything else until the mother is able to nurse. For constipation after nursing has begun water and sugar may prove laxative, or a little manna may be administered.

Ophthalmia Neonatorum.—Dr. John Weeks of New York County said that at times the infection of ophthalmia seems to be antepartum. When the first symptoms become manifest more than three days after the labor, it is practically certain that the infection has come from a source other

than the genital tract of the mother. At times, of course, the ophthalmia of the newborn is due to anomalies of the tear sac. Usually if the symptoms develop before the fourth day the infection is due to the gonococcus of Neisser, no matter how mild the symptoms are. Cases that develop later are not due to the gonococcus. Knowing as we do now how long gonococci may persist in males and also in females, it is very easy to understand how gonococci may be present in the genital tract of the female long after the father or mother has had an acute attack of gonorrhea. The other microbes that occur on the conjunctiva of the newborn are the pneumococcus, the bacillus of acute conjunctivitis and the Klebs-Löffler bacillus. According to the statistics of the American Ophthalmological Society, out of 50,000 blind in the asylums of this country 5000 owe their misfortune to ophthalmia neonatorum.

Prophylaxis.—Statistics show that prophylactic precautions will reduce the number of cases of ophthalmia very materially. Out of 17,500 newborn children in various maternity hospitals in New York where no prophylactic precautions had been taken about 9 per cent. developed some ophthalmia. Credé at Dresden demonstrated that in 12,000 cases treated by his method, that is, by the instillation of a drop of a two-per-cent. nitrate of silver solution immediately after birth, less than 1 per cent. developed ophthalmia. Others have suggested washing out the eyes of the newborn with a dilute sublimate solution or carbolic acid solution, or with sterile water. None of these agents have given nearly as much satisfaction as the nitrate of silver. This measure may be employed immediately after the child's bath and should always be employed if there is the slightest suspicion of an abnormal discharge, however slight, in the mother. When the disease develops attendants should be warned at once of its contagiousness. The other eye should be protected by frequent cleansing. Protective shields give no satisfaction in infants. The reason why any conjunctival condition in a child is apt to become severe is that there is very little lacrimal fluid and hence the pathological material is not washed off. This gives the primary indication for treatment, frequent cleansing of the eye. The second indication is found in the biology of the gonococcus. This germ as well as the microbe of acute conjunctivitis does not grow well at a temperature lower than 92° nor above 110° F. It is not easy to raise the temperature of the eye, but it is comparatively easy to lower it to 90° F. and so prevent the luxuriant growth of the bacteria. The prognosis in any given case depends on the general health of the child. Healthy children's eyes can be saved even when very bad.

Major Obstetrical Operations.—Dr. Edward Reynolds of Boston said that version and high forceps for contracted pelvis give practically no more mortality for the mother, but a mortality of 50 per cent. for the child. Induced labor has about the same statistics, about 50 per cent. of the children dying before they reach the age they would have attained had they been born at full term. The Cesarean operation has a mortality of from 35 to 40 per cent. Unfavorable cases, that is, women who are exhausted by having been days in labor, are much more unfavorable while favorable cases have a rather low mortality. With the Cesarean operation the child is nearly always saved. In symphysiotomy the mortality is only slightly larger in unfavorable than in favorable cases. This is easily explained because there is practically no shock. The fetal mortality in symphysiotomy is not very low, however. The principles that must guide the general practitioner, according to Dr. Reynolds' experience in 22 successful cases where major operations were necessary, are as follows: Use forceps or version if possible; if not then the Cesarean operation is better than prematurely induced labor if it can be applied in favorable cases. In unfavorable cases symphysiotomy must be the operation of choice if the mechanical conditions in the pelvis will permit it. If the mechanical conditions will not permit it, then the child's head must be crushed. It is better to save the potential mother of many children, rather than to sacrifice her for her unborn fetus. In order to secure most cases under favorable conditions, the woman's condition must be discovered before labor. Whenever a primipara is abnormally small in stature, or suffers from any deformity of the hips or legs, the general practitioner should call in a consultant if he does not feel equal to pelvimetry.

Puerperal Sepsis.—Dr. William R. Pryor of New York County said that sepsis is due in only a very small proportion of cases to autoinfection. It is known that forty-nine per cent. of prostitutes and a certain number of maritally-infected women have persistent foci of gonococci in the glands of their cervix. These may suffer from self-infection. Certain pregnant women have purulent foci in their tubes. But these very rarely cause puerperal sepsis, because they produce either sterility or give rise to early abortions. Most of the infection comes from without. The only scientific method of treating puerperal sepsis is to examine the secretions carefully in order to find their bacterial contents. This secretion must be obtained, not at the vulvar orifice, but from the cul-de-sac of the vagina through a sterile tube. In about one-third of the cases the infection will be found to be due to streptococci. In a certain number of cases pyogenic cocci will be found, while in most cases only saprophytes occur. Intermittent washing has been used on general principles for all cases of puerperal sepsis. In the pyogenic and streptococcic forms it will be found to do very little good. Saprophytic infection will at once begin to improve under this treatment. Marmorek's serum will be found to do very little good even in cases of streptococcic origin. It is now known that there are many varieties of streptococci and

one cannot be sure which variety is present nor can one be certain of having the antitoxic serum for that special variety.

Treatment of Puerperal Sepsis.—For septic thrombosis the removal of the uterus often does good. This is the only form of puerperal sepsis in which hysterectomy is ever indicated. For other forms of sepsis Dr. Pryor has tried with very satisfactory results this method: The uterus is first thoroughly curetted and then Douglas' pouch is opened and iodoform gauze is packed tightly around the uterus. In a few hours iodine will be found in the urine and this seems to have a good effect on the toxins in the blood. If the pulse rises to 120, three quarts of normal salt solution are injected intravenously. By this many seemingly hopeless cases can be saved.

Symposium on the Blood.

Points in Technic.—Dr. Edward K. Dunham of New York County detailed the technic of blood examination, dwelling especially on certain less frequently used methods of investigating blood composition which have come to notice in recent years and which promise to be of service for the clinician. With regard to the taking of specimens Dr. Dunham insists especially on the most scrupulous cleanliness. Cover-glasses or slides should be washed in water, in bichromate of potash solution, in sulphuric acid and in alcohol and ether. Only thus can all dirt and grease be removed from them.

Specific Gravity.—To determine the specific gravity of the blood a drop of it is placed in a mixture of chloroform and benzol. If the drop of blood floats on the surface of this mixture its specific gravity is higher than it and benzol is added until the blood sinks. If it goes to the bottom then chloroform is added until in either case the drop of blood eventually floats freely in the chloroform-benzol mixture. When it does so, it is of the same specific gravity as the mixture, and this is determined by an ordinary h drometer. Usually at the beginning of the observation the chloroform-benzol fluid is taken of the ordinary specific gravity of normal blood. The reason for this special mixture is that the blood remains entirely coherent in these fluids, that is, it is not dissolved or diffused in the mixture, but floats as a more or less spherical body. This determination requires absolutely no apparatus, but takes considerable manipulation and some practical familiarity with the method or a good deal of time is consumed. Specific gravity may be determined by direct weighing. For this a capillary-tube is filled first with water, then weighed very exactly on a delicate balance; then carefully cleansed and dried, refilled with blood and again weighed. Comparison of the two weights gives a ratio from which the specific gravity of the blood can be easily decided. The method is very simple, but it requires an accurate balance weighing to one-tenth of a milligram.

Reaction of the Blood.—This is often thought to be of special significance. Its determination is not difficult, but it requires very delicate reagents. Usually a solution of tartaric acid is added to the blood until it is just neutralized. The point of neutralization is determined by very delicate litmus paper. To do this exactly requires familiarity with the use of the chemical reagents for such determinations.

Rapidity of Coagulation.—In recent years it has often been thought desirable to know the rapidity with which the blood coagulates. Certain points in prognosis, especially in gall-bladder operations when patients have suffered for a long time from severe jaundice, are said to be dependent on the coagulability of the blood. It may be determined rather easily as follows. A capillary-tube is taken, the lumen of which is something less than 1 25 of an inch. In this some blood is allowed to flow and then a clean white horsehair is passed through the column of blood in the tube. As long as the horsehair on being removed from contact with the blood remains colorless, no coagulation has taken place. As soon as the blood clots it becomes covered with a red color.

Hemoglobinometry.—Dr. Dunham showed the instruments of Gowers, Fleischel, Oliver and Baer. He stated that these determinations of the hemoglobin by means of comparison of colors are open to several sources of error. One is that diffusion of the coloring matter of the blood does not always take place in the same length of time. When the observation is made this diffusion is often not complete and the reading of the amount of hemoglobin is necessarily lower than it should be. Baer attempted to remove this source of error by making his color comparison with the undiluted blood. Another source of error is the personal equation in the appreciation of tint agreement. This amounts to at least five per cent.

The Ferrometer.—Hemoglobinometric methods are open to certain seemingly inevitable objections and the attempt is being made to obviate them by determining, not the color of the blood, but the amount of iron in it. The iron present represents very nearly the amount of hemoglobin. Some of the metal, it is true, is dissolved in the plasma, but this is not enough absolutely to vitiate ferrometric conclusions. To determine the amount of iron the blood is evaporated, the residue incinerated and the fused ash dissolved in bisulphate of potash solution. To this a sulphocyanide is added so that a ferrocyanide is formed. This gives a distinct color to the solution, which is then compared with a solution of ferrocyanide of known strength.

Leucocytosis in Surgery.—Dr. Joseph C. Bloodgood of Johns Hopkins University said that the presence of leucocytosis in acute abdominal surgery can be of the greatest service by enabling the surgeon to make a definite diagnosis a few hours earlier than would be otherwise possible. As hours are precious in abdominal surgery this promises to be a valuable aid in the near future. In three conditions especially is the determination

of the presence or absence of a leucocytosis important: They are appendicitis, peritonitis, and intestinal obstruction. In acute purulent conditions leucocytosis rapidly ascends. Even in simple non-purulent so-called catarrhal appendicitis there is distinct though not very marked leucocytosis. In gangrenous appendicitis, or where the appendix is distended with pus, the leucocytosis rises rapidly.

Peritonitis.—At the onset of the peritonitis there is an immediate rise in the leucocytosis. This becomes very high when the peritonitis is of a virulent character. Very often after perforation of the intestine there is rapid fall in the number of leucocytes. If the leucocytosis continues high for the first 36 hours, it is of no special significance in the prognosis. If, after 36 hours, the leucocytosis persists, the prognosis is good and nature is going to triumph over the infection. In cases that are to be fatal there is a drop in the leucocytosis after 36 hours.

Intestinal Obstruction.—Cabot of Boston asserted some time ago that in intestinal obstruction there is no rise in the number of leucocytes. Leucocytosis has usually been found in these cases at Johns Hopkins. In obstruction with gangrene the leucocytosis rises very high. The higher the leucocytosis the shorter time it takes to rise. Further details of this paper will appear later in the MEDICAL NEWS.

Pernicious Anemia.—This paper was read by Dr. Alfred Stengel of the University of Pennsylvania (see p. 603).

Leukemia.—Dr. C. Y. White of the University of Pennsylvania said that leukemia is a form of anemia characterized by the presence of a very large number of white blood-cells and a reduced number of red blood-cells. All the forms of white cells in the blood are increased in number, but not all of them equally. This gives rise to certain types of leukemia. Two special forms of cells have been described as occurring in leukemia—the neutrophilic myelocytes and eosinophilic myelocytes. The presence of these cells, however, is not pathognomonic of leukemia, for they have been found in other blood disturbances and in certain infectious fevers. The study of the microscopic character of the blood has led to a division of leukemia into two types, *viz.*, the spleno-myelogenous and the lymphatic forms of the disease. Spleno-myelogenous leukemia is really a pernicious anemia with an increase of the white cells and the presence in considerable numbers of the neutrophilic and eosinophilic myelocytes. Lymphatic leukemia presents less degeneration of the red blood-cells and less disturbance of the normal form of the white cells and of the proportion between the different forms of white cells existing in normal blood. In a word there is less disturbance of the blood-making organs. It is evident that further study of the minute characters of the white blood-cells will enable us to draw more definite conclusions as to the course of cases of leukemia and their ultimate prognosis.

Treatment.—Practically the only remedy that has done good in certain cases of leukemia is arsenic. It should be given in increasing doses as the tolerance of the patient will permit and should be continued for long periods of time, but with interruptions in order to avoid the production of complications that sometimes follow the arsenic treatment. It seems worth while noting that in two cases of leukemia in which abdominal operations were done there was for a time after the operation a reversion to the normal number of leucocytes in the blood.

Parasites in the Blood.—Dr. Leon T. LeWald of New York County read a paper with this title. He pointed out and illustrated the distinctions between the germs *Culex*, non-malarious and *Anophcles*, the malarial carrier. This paper will appear in a future issue of the MEDICAL NEWS.

Blood Examination in Trichinosis.—Dr. H. C. Gordinier of Rensselaer County read a paper on this subject. It is only within recent years that the value of a differential blood-count has been recognized. A great increase in the eosinophile cells is characteristic of this condition. This paper will appear in a future issue of the MEDICAL NEWS.

THIRD DAY—OCTOBER 17TH.

Address by Dr. Charles A. L. Reed.—It affords me extreme pleasure, as President of the American Medical Association, to acknowledge your cordial greeting. I recognize and accept it as an expression of filial devotion to the National organization, which, for the time being, I have the honor to represent. My pleasure is intensified, however, because I find in your charter, a copy of which has been placed in my hands by your efficient Secretary, a declaration of objects or principles which appeal to me with peculiar force. They are more comprehensive than those usually embraced in the fundamental laws of medical associations. The first two that are enumerated—the advancement of our humane sciences and the maintenance of honor and character in our ranks—are themselves sufficient to commend this organization to the good favor of every practitioner in this Empire State. The third, providing as it does for the beneficent protection of brethren who have fallen in the great strife, must touch a sympathetic chord in the bosom of every physician who appreciates the mutability of fortune. In no calling of life may misfortune come more swiftly, more relentlessly, than in that devoted to the welfare of humanity. It is the irony of experience that often he who most needs succor is the Samaritan himself. Your example, therefore, in this regard, is worthy of emulation by every State medical association in the country.

I am, however, on this occasion particularly interested in the fourth plank of your platform. I allude to that statement which declares that one of your objects is the establishment of harmonious relations, as the charter itself declares,

"the establishment and furtherance of cordial professional relations and fellowship between the medical profession of the State of New York and the medical profession of other States of the United States and of foreign countries through the medical associations and societies of such States and countries."

Criticism of that declaration must exhaust itself in commendation. In it are embodied what should be recognized as the essential elements of medical organization throughout the profession. It is a hopeful sign that such a broad catholic principle should have been enacted into law by the legislature of a great State, and should have been voluntarily subscribed to by the vigorous, progressive and enlightened men assembled in this hall. I like to think of all that is implied by this part of your splendid organic laws. It breathes the spirit of harmony. It means, if it means anything, and it does mean, as it should mean, the union of the medical profession of New York. It means, as it should mean, that every member of this organization should become a member of the American Medical Association—and I am gratified to know that many already sustain that relation. And finally, it means, as it should mean, that, over and above all, you stand consecrated to the union and the solidarity of our great National profession. Your initiative will meet with a hearty response, not only from the American Medical Association, but from the great independent body of the profession. The genius of harmony, of unity, of fraternity, is abroad in our ranks. It will brook no opposition. Yet this movement is not revolutionary; it is, rather, the culmination of another stage in the resistless evolution of our profession. It ought, therefore, to take but little time and less effort in which to make a change which, in sentiment, is already accomplished. There is but little necessity, the country over, for rescinding resolutions, altering by-laws or amending constitutions, although some memories may well be effaced and possibly some conventions, that have honorably served their day, but that are now relatively meaningless, may well be either modified or revoked. He who interposes either prejudice, preference or prerogative as obstacles to this consummation must be recognized and treated as the enemy of progress. Organization, and organization, too, in the direction of union, must advance. The dissemination of science, the advancement of professional standards, the maintenance of a wholesome *esprit de corps*, the promotion of benevolent enterprise, and the increase of the power of the profession at Albany, at other State capitals and at Washington, all depend upon it. This, and more, is clearly implied by your splendid declaration of purpose, and I come to tell you that the profession of the entire country is with you. I am convinced, and I have reasons for my conviction, that the profession, acting through its organized bodies, is ready and anxious to take steps that will enable it to present a united front to the dawning century.

Diphtheria and Milk Supply.—Dr. Chauncey P. Biggs of Tompkins County gave some details of twenty-eight epidemics of diphtheria the origin of which had been traced to the milk supply. Of these ten followed the distribution of milk that had been handled by some one connected with a family in which diphtheria existed. Eighteen epidemics were reported in which the source of infection seemed to be the existence of chapped teats and ulcerated mammæ in the cow. In England, according to Dr. Lennox Browne, diphtheria of the lacteal structures in the cow is called chapping. In the District of Columbia three milk epidemics of diphtheria were traced in which a dairy-maid, a dealer, and a milk-wagon driver were affected by diphtheria. From Germantown an epidemic is reported in families of good sanitary surroundings who had no intercourse with one another and whose only community of interest was the same milkman. In such epidemics the milk-drinkers in a family are the only ones attacked originally. Members of families who drink only boiled milk escape.

Diphtheria in Small Towns.—Prof. Veranus A. Moore of Cornell University showed that the spread of diphtheria can only be prevented by quarantine carefully maintained until the bacterial examination of the throats of those who were affected have been negative in three consecutive cultures. For this a bacterial station is absolutely necessary. It is not difficult, however, in a country district to have such a station in some centrally-located town to which the cultures can be sent for examination. These culture methods make it possible to trace the course of epidemics of diphtheria and also to find their origins. Such data will soon enable us to limit very much the spread of diphtheria. Prof. Moore has found that the bacilli of the disease remained in throats on an average of fourteen to twenty days. The longest time after an attack that virulent diphtheria bacilli were found in the throat was fifty-three days.

Tonsils as Portals of Infection.—Dr. Julius Ullman of Erie County said that in recent years we have come to realize more and more that the tonsils are the gateway for many infections. The connection between affections of the tonsils and rheumatism and various forms of endocarditis was pointed out. The constant presence of many pathogenic germs in the mouth gives a very favorable opportunity for the invasion of bacteria whenever a reduction in resistive vitality occurs. The frequency with which chancres of the tonsil occurs shows how liable to infection are the open mouths of the tonsillar crypts. All types of cocci have been found in the tonsils and there is no doubt that many forms of tonsillitis are not only infectious but contagious. Many sore throats are followed by nephritis and it seems probable that many an insidious Bright's disease that makes its appearance suddenly in later life is the result of a sore throat in early years.

The Throat Rheumatism.—Dr. Jas. J. Walsh of New York County in the discussion said that,

while rheumatism is now generally conceded to be an infectious disease, its specific cause is unknown. It is known, however, that rheumatism predisposes its victim to secondary infection by other bacilli. To these rather than to the rheumatism itself many rheumatic complications are due. Even the heart disease is now often attributed to this. The secondary infective bacteria find their way in through the digestive tract and not infrequently through the tonsils. There is need, therefore, that the mouth should be frequently cleansed.

Diphtheria and Pneumonia.—Dr. Delancey Rochester of Erie County described a case in which sore throat found to be of diphtheritic character was accompanied by the symptoms of bronchitis. The diphtheria grew better under antitoxin. The pulmonary condition developed and a typical case of pneumonia ran its course. Another case was of an almost similar character. They illustrate the necessity for employing all means of physical examination wherever suspicious accessory symptoms suggest that the diagnosis is incomplete.

Scarlatina.—Dr. Delancey Rochester described three cases in the children of one family during the course of an epidemic of scarlatina. None of them presented any rash, but there was the typical disturbance of pulse-respiration ratio. In a warm bath the skin reddened very easily. All of the children desquamated after several weeks. These cases show how easy it is to miss slight cases of scarlet fever and so permit spread of the disease. During epidemics all febriculæ in children should be suspected.

Jonnesco's Operation.—Dr. Marcel Hartwig of Erie County reviewed the status of the neurectomy of the cervical sympathetic which has been popularized by Prof. Jonnesco of Bucharest. It has now been used for a number of different pathological conditions. Jonnesco himself operated in 97 cases of severe epilepsy, 15 of which were improved. In exophthalmic goiter 15 cases have been operated on, one of them unilaterally followed by unilateral improvement. Of the 14 remaining cases 10 were cured and 4 improved. In glaucoma the operation has given particularly good satisfaction. It is best adapted to those cases in which iridectomy does no good. It is followed by improvement of vision even where iridectomy has failed to bring improvement. Thus far 12 patients have been operated on for glaucoma and in no case has the operation failed to give improvement while in some the effect has been marvelous. Operations for the removal of the cervical sympathetic have now been done for over five years. In no case have the dreaded physiological consequences that so many anticipated been observed.

Climate in Tuberculosis.—Dr. Clarence G. Campbell of New York County said that in the present enthusiasm for sanatoria for the tuberculous it was sometimes lost sight of that climate is the most important factor in the successful treatment of tuberculosis. Patients whose circumstances permit will find their surest benefit in a region where air and sunlight and freedom from germs make the conditions most suitable for health. Such a climate is Arizona, where sunshine is abundant, where irritating dust particles carrying bacteria are infrequent, and where at low altitudes conditions of dryness obtain that can be secured at similar altitudes nowhere else. This tract of low-lying valleys of great dryness is the characteristic climatic condition that makes Arizona suitable for consumptives. The temperature of many parts of the State is too warm in the summer months, but then patients can change their habitations to go farther North. A yearly change of this kind always does good in any climate.

President's Address.—Dr. E. D. Ferguson of Rensselaer County then delivered the presidential address, the subject of which was umbilical hernia. During the year he has had occasion to operate on several large umbilical hernias. He found that the ordinary method of reducing the sac and then bringing the edges of the umbilical opening together, in the hope of making a radical cure, was often a failure, because too much tension was exerted on the stitches in bringing the sides of the opening together and it was impossible to secure firm union. By large hernia he does not mean any particular size, but refers to those in which, after the contents of the hernial sac are reduced, it is very difficult or impossible to bring the edges of the hernial ring in apposition. Having to operate on one of these cases, he found that there were tissues lying alongside the umbilical ring which he could use as flaps to cover the opening. He made an incision, about five inches long, at the outer edge of each rectus muscle, the middle of the incision being at the umbilicus. This incision cut through only the outer sheath of the rectus muscle. Transverse incisions were then made and the sheath lifted up from the muscle. This gave two flaps of aponeurotic tissues which could easily be united in the midline by shoemaker's sutures. These flaps, being attached normally where the circulation is rather good, gave very healthy tissue thoroughly capable of bearing the strain that might be put upon them by internal abdominal pressure. Several months after the operation Dr. Ferguson noticed a slight tendency to relaxation of tissues at the lower part of the apposition of the flaps. It is here particularly that a series of transverse interrupted sutures must be carefully put in in such a way as to be secure and yet avoid strangling the tissues. The skin was incised once more and these sutures were put. The case has since been doing very well. During the second operation an excellent opportunity was afforded to examine the flaps and the state of union. Every thing was found firm and solid.

Symposium on Tuberculosis.

General Etiology.—Prof. Victor C. Vaughan of the University of Michigan said that it is now generally conceded that tuberculosis is always due to the tubercle bacillus which was described

by Koch about twenty years ago. Certain questions of etiology, however, still remain open. The bacillus tuberculosis is known to be parasitic in animals, but there is a doubt as to whether it might not occasionally be saprophytic, that is, capable of living on dead material. At first the morphology of the tubercle bacillus was considered to be that of a simple rod. Branched forms of the bacillus have, however, been found and in a series of cases it has been known to assume a form similar to that of the ray fungus. At first these branched and radiate forms were thought to be degenerate types of the organism, but they have been found to occur even when injections are made intra-arterially, indicating that they are forms with very special vitality. An opinion has been growing of late that the tubercle bacillus is really a type of a higher fungus. A number of bacilli have been found that resemble it. A pseudo-tubercle bacillus has been particularly described which occurs very frequently in butter and which cannot be distinguished except by inoculation experiments. A bacillus that has all the staining characteristics of the tubercle bacillus occurs in timothy hay. This bacillus is, however, not pathogenic for man, or at least only very slightly so, and the lesions that it produces do not resemble those produced by the tubercle bacillus. It has therefore been assumed that the tubercle bacillus is a pleomorphous fungus at times pathogenic, at times not; at times saprophytic, at times only parasitic. The conversion of the non-pathogenic form into pathogenic varieties has been looked for, but has not yet been found. It is probable, however, that the tubercle bacillus we know is only parasitic. It may have certain relatives, like the pseudotubercle bacillus or the timothy bacillus, that belong to the same family, but are never convertible into it. After all, edible and poisonous mushrooms belong to the same general order of plants, and yet no botanist claims that any innocent form ever by any chance becomes poisonous.

Animal Tuberculosis.—Animal tuberculosis occurs only where the disease can be contracted from other animals that have the affection. More than this, it is contagious only when the tissues are broken down and the animals are casting off the infective material. Tubercle bacilli never exist in expired air, unless little droplets of mucus or saliva are coughed or sneezed up. As is known it is acquired by transference from animal to animal. A number of epidemics have occurred as a consequence of circumcision. Tuberculosis frequently invades tattoo marks from infected saliva. In a number of cases surgeons have inoculated themselves during operations upon tuberculous subjects. These unconscious experiments are as convincing as experimental inoculation in animals.

Prophylaxis.—It is known that the tubercle bacilli may pass through the intestinal walls without producing a lesion at the point of penetration and thus give rise to tuberculosis in many parts of the body. Because tubercle bacilli may get into the circulation it is necessary to exercise the greatest care with regard to tuberculous milk and meat. Every dairy cow should be tested by tuberculin and every dairyman should have a license. Non-tuberculous cows alone should be allowed to furnish milk for human consumption. It is to be remembered that the bacillus of bovine tuberculosis is more virulent for animals than is the bacillus found in the sputum of man. The virulence of the sputum bacillus can be increased by being grown in milk. In general, however, there seem to be marked variations in the virulence of the bacilli that affect individuals. Dr. Vaughan has seen a most rapidly-fatal case of phthisis florida develop in a magnificent specimen of young manhood two months after he began to live with a tuberculous mistress. There is, of course, in addition a difference in the susceptibility of different individuals and this varies in the same individual. Of the regular soldiers who went to Santiago not one probably had active tuberculosis. Yet within three months fourteen died of tuberculosis and a number developed the disease in its most active form. The conditions surrounding the tuberculous patient are important in this respect. While fifteen in 10,000 die in Hamburg from tuberculosis who are worth more than $500, forty die in every 10,000 of those who are worth less than $500. In order to eradicate tuberculosis the important first step is to improve the condition of the city poor.

Tuberculosis of Nose and Throat.—This paper was read by Dr. Jonathan Wright of Kings County. It will appear in a subsequent issue of the MEDICAL NEWS.

Ocular Tuberculosis.—Dr. Charles Steadman Bull of New York County said that tuberculosis of the eye is very rare. It occurs mainly as a secondary infection in individuals suffering from tuberculosis in some other part of the body. On the conjunctiva it is even more rare than on other structures in the eye and does not occur more than once in about 30,000 cases of affections of the conjunctiva. It occurs oftener in children, although in them the iris and choroid are affected oftener than the conjunctiva. Tuberculous infection of the conjunctiva is nearly always situated on the inner side of the upper lid and occurs only where some lesion of that membrane already exists. The lid is swollen and edematous and when everted a punched-out ulcer, with a greyish base or with grey nodules resembling miliary tubercles, is found. At times this bleeds easily on handling. Usually the pre-auricular gland is enlarged, sometimes also the submaxillary gland. Bacilli may be found in scrapings. They are hard to find, as a rule, in sections made from tissue excised in the neighborhood of the ulcer. It is not an unusual thing for the affection to be bilateral. The differential diagnosis involves trachoma, epithelioma and syphilis of the conjunctiva. In trachoma the main differential factor is the absence of bacilli. Epithelioma is diagnosticated by the age of the patient

and by the glands being involved late. The diagnosis of syphilis is made by the greater acuity of the process and by the therapeutic test. The treatment of tuberculous conjunctivitis consists in the excision of the ulcer, if it is near the margin of the lid, with a plastic operation to fill up the defect, or thorough cauterization of the ulcer if it is at a distance from the edge of the lid.

Corneal and Retinal Tuberculosis.—Tuberculosis of the cornea is very rare. In strumous children, however, it is always well to suspect a persistent ulcer of the cornea as tuberculous. The treatment of these conditions is much more constitutional than local. Tubercles on the choroid do not occur as often as is thought. They are said to be frequent in meningitis and in general tuberculosis, but they are very rarely discovered during life as they exist mostly in young children in whom the difficulty of examination is very great. Tubercles in the retina and optic nerve occur as the result of the extension of the tuberculous process from the meninges. Gauze-like opacity covering the optic papilla is often noted. A picture not unlike this occurs in syphilis, however, but usually marked symptoms of meningitis have been noticed before the tubercles in the eyeground are found. Where tubercles can be seen in the eye the differential diagnosis of typhoid fever from general tuberculosis is clear.

Auricular Tuberculosis.—Dr. Seymour of New York County said that tuberculosis of the ear is usually secondary to pulmonary tuberculosis. Tubercles occur not infrequently on the tympanum, but often run so latent a course that their presence is not noted until a discharge occurs. From the tympanum the infection passes through the drain of small bones into the internal ear and causes a chronic pathological process. Such affections develop only in anemic, debilitated patients. There is undoubtedly a communication of tuberculosis from the throat through the Eustachian tube to the ear in tuberculous patients. The prophylaxis of auricular tuberculosis requires the most careful management of laryngeal tubercle. Patients should be warned not to attempt to perform the Valsalva experiment, because tuberculous material may easily be forced into the Eustachian tube. For a similar reason the use of the Politzer bag for simple salpingitis should be avoided. There is no doubt that many patients have had infective material forced into the Eustachian tube by thoughtless inflation.

Treatment of Auricular Tuberculosis.—Constitutional treatment of patients affected by tuberculosis in any other of the structures of the ear is much more important than the local treatment. A progressive obstinate lesion may be arrested by a stay in the Adirondacks. If operations are to be done, an especially nourishing diet with tonic treatment should be given for several weeks before the operation. Granulations in the ear should be kept down by the use of the snare or by cauterization with chromic acid. Lactic acid has given such good results in laryngeal tuberculosis that it deserves a trial in auricular cases also.

Peritoneal Tuberculous Glands.—Dr. Maurice H. Richardson of Harvard University said that very few operations have as yet been done for tuberculosis of the glands of the peritoneum. However, there are circumstances under which operation not only relieves the patient of a painful condition, but probably saves life. Of late, since operation on the abdomen has become much more frequent, it has been found that enlarged glands occur in the mesentery much oftener than was thought. The symptoms of severe cases are abdominal pain, fever and tenderness. They resemble very much the symptoms of appendicitis. Usually, when the symptoms occur, the glands are already broken down and there may be an abscess in either iliac fossa. At times ascites occurs, but only in very advanced cases. The treatment of the condition is the opening of the abdomen and drainage. At times the symptoms from these enlarged glands are so severe as to indicate an acute trouble. Any of the glands in the mesentery may be affected and sometimes extensive operations are required for their removal. In the cases reported thus far, however, the glands have all been caseated and have shelled out rather easily. Large amounts of broken-down tissue can be thus removed without much risk. At times the removal of large portions of the mesentery may endanger the life of a portion of the intestine by disturbing its circulation. If this occurs it can be noticed rather easily after a few minutes by the darkened color of the intestine. When such a complication occurs a portion of the intestine must be excised. One risk involved in the operation is that the free anastomosis at the base of the mesentery may threaten serious hemorrhage, which, however, may be controlled by packing.

Urinary and Uro-Genital Tuberculosis.—Dr. Samuel Alexander of New York County then read this paper, which appears in this week's issue of the MEDICAL NEWS. (See p. 599.)

Bone and Joint Tuberculosis.—Dr. E. H. Nichols of Boston described the pathology of tuberculous bone lesions and illustrated by lantern slides the original focus in the epiphyseal cartilages and its gradual advance into the true bony substance with disorganization of joint structures. In Pott's disease the illustration showed the beginning of a tuberculous process in the bodies of the vertebræ and its gradual advance to the surface beneath the spinal ligaments. A very striking illustration shows that notwithstanding pronounced deformity the spinal canal remains absolutely unencroached upon by the tuberculous process. Nervous symptoms occur in Pott's disease either as the result of a subdural abscess, or of pressure on nerve-roots because of the development of the tuberculous processes around the spinal foramina. At times a sort of dislocation takes place because of the softening of the bodies of the vertebræ and then the upper fragment may press upon the cord. Dr. Nichols

illustrated how extraordinary extortion of the aorta may be as a consequence of the spinal deformity. In these patients, usually adults, the aorta, having reached its full development, has to accommodate itself to the shortened spinal column. In the treatment of certain cases of joint disease, it must be remembered that when conditions have become inveterate the circulatory system gradually accommodates itself to the altered state of affairs. If a misguided effort is made to restore former conditions as far as is possible with the deformity, the manipulation may cause interference with the blood supply. Dr. Nichols showed a case in which there had been ankylosis of the knee-joint with backward dislocation. In improving the position of the knee this backward dislocation was not corrected although the limb was straightened. The result was interference with the popliteal artery. The foot became gangrenous and had to be amputated. Later on amputation had to be done above the knee.

Cutaneous Tuberculosis.—Dr. John A. Fordyce of New York County read a paper on certain phases of tuberculosis of the skin and the superficial fascia. Although many other forms of cutaneous tuberculosis have been discovered in recent years, lupus presents such a distinctive picture with special features of its own that it still deserves a separate place. That it is surely tuberculous is known from the fact that at times generalized tuberculosis results from the scraping of a lupus patch. Besnier of Paris condemns this method of treating lupus for this reason. Epithelioma occurs so often in the scars of old lupus that there is no doubt that something more than chance causes it. The devitalized tissues of the tuberculous lesion seem to make an especially favorable nidus for its growth and its prognosis is much more grave.

Other Tuberculides.—Dr. Fordyce showed a series of other lesions of superficial tuberculosis. An interesting condition is lymphangitis, a tuberculous process following very closely a set of lymph-vessels. Other illustrations showed a series of glandular lesions in which only the lymph-glands had become infected and then, after caseation, broke down. All tuberculous skin affections are much more common in the young than in adults. Seventy-five per cent. of patients who suffer from lupus acquire the affection before they are twenty.

Differential Diagnosis.—Certain cutaneous lesions resembling those produced by the tubercle bacillus have been described in recent years. Of these the most prominent is blastomycetic dermatitis, caused by organisms which closely resemble the yeast. The most important affection that presents itself for differentiation is cutaneous syphilis. Dr. Fordyce presented a picture of a case in which most hideous deformity of the face had taken place in consequence of what was thought to be a tuberculous process. The therapeutic test showed that it was syphilis. The lesions healed in a few weeks under proper treatment. Unfortunately, however, irreparable damage had been done to the tissues of the eyes and the nose.

Fourth Day—Thursday, October 18th.

Ichthyosis Hystrix.—Dr. Frederick Holme Wiggin read for Dr. George W. Goler of Monroe County a paper on the treatment by electric light of this usually obstinate affection. The case was one of congenital ichthyosis in which the arms from the lower third to the shoulder and beyond the axilla were covered by a series of brownish, roughened protuberances resembling flat warts. On the legs the affection extended from the malleoli up to the trunk, and patches existed on the abdomen and flanks. The cheeks and auricles were also scaly. The patient was subjected to electric light. Lanolin was rubbed into the arms and then the light, a twenty-ampere lamp, was concentrated on the affected parts by means of two eight-inch plano-convex lenses. After two seances of twenty minutes each the arms were much improved. After twenty days, with eighteen half-hour exposures to the light, the cure seemed complete. For the legs the arc light was used and its rays were concentrated by a nine-inch parabolic reflector. For three months the patient has remained perfectly well. During the summer he perspired freely from the affected patches. He has never perspired before from these areas. The severity of the case shows that this was one of the forms of true ichthyosis hystrix of which Hyde says, "In no case can a favorable result be anticipated." Notwithstanding this unfavorable dictum this case seems to have been completely cured.

Specific Corporeal Gravity.—Dr. Heinrich Stern of New York County reported a series of investigations upon the specific gravity of the body and upon the value of this factor in physical diagnosis. He has found that the human body in health varies in its specific gravity from about 1060 to 1075. Patients whose specific gravity is lower than 1060 are always delicate in health and usually have some serious organic disease. On the other hand, individuals whose specific gravity exceeds 1075 are apt to have some serious disturbance of nutrition or defect of metabolism. The subject is only just opening up, but it seems to promise to be of decided value in the differential diagnosis of neurotic conditions from true organic disease or from serious disturbances of metabolism. It is not unlikely that further developments may show that more explicit information can be obtained by this method of testing the corporeal specific gravity.

Aseptic Minor Surgery.—Dr. Douglas Ayres of Montgomery County said that now that asepsis has become so thoroughly established as the rational basic surgical principle, even the minor operations done in the practitioner's office must be performed as far as possible with every aseptic precaution. It is well worth the trouble it entails in the lessened worry over morbidity after operation. In addition the practitioner owes it

to himself and to his patients to do his surgery in the best possible manner.

Intestinal Obstruction by Meckel's Diverticulum.—Dr. John F. Erdmann of New York County gave the details of three cases of this anómalous character that have come to him for operation in the last six months. The condition, obstruction by the anomalous persistent diverticulum, is very rare, yet these three cases by that peculiar chance that always sends anomalies in series have been encountered in his private practice in so short a time. Ths symptoms of the condition resemble very much those of appendicitis. In the first case it was thought that acute appendicitis might be at the bottom of the symptoms. The incision for the condition was made the same as if for an appendicitis operation. The diverticulum was treated just as the appendix would be if it were the offending agent. If it was small, it was inverted into the intestine; if it was large, it was simply amputated and sewed up as if it were intestine. All three of the cases recovered without incident and have continued in good health ever since.

Ectopic Gestation.—Dr. Hiram N. Vineberg of New York County dwelt on the difficulty of making an assured diagnosis of this condition in many cases. Where the classical symptoms are present there is very little difficulty. Time is an important factor if the safety of the patient is to be assured. Whenever what seems uterine abortion, but with any suspicious symptom, occurs Dr. Vineberg suggests that an examination under an anesthetic should be made. This is the only method that will assure against the unexpected in these serious cases. This as a routine practice would save many lives. The difficulty so far with regard to these cases has been that the physician is put off his guard by the seeming simplicity of the conditions that obtain when he is first called to the patient.

Modern Minor Gynecology.—Dr. H. H. Goelet of New York County said that the resources of modern minor gynecology are too little valued by the general practitioner. In diagnosis the use of the microscope has rendered the possibility of more rational treatment much easier than before. Endoscopy of many body cavities has become a feature of modern diagnosis. Uterine endoscopy may give important information. Dr. Goelet exhibited a uterine endoscope that has proved itself of great service. In therapeutics the use of uterine irrigation promises to be of great value. Dr. Goelet presented a uterine irrigator which requires no dilatation of the cervix for its use and can consequently be employed in every-day office work. Electricity, though its employment has been decried, the benefit derived being set down to suggestion, has proved itself of too great practical value in too many hands to be so lightly dismissed. It must always be remembered that many gynecological symptoms either depend on or are aggravated by lack of nervous tone and the presence of constipation. For the first the gold and arsenic preparations will be found to give brilliant results where many other things have failed. For chronic constipation the old Pharmacopœia cathartic pill, every third night, is better than most of the new-fangled remedies and it need not be increased to produce its effect.

Intraspinal Cocainization.—Dr. S. Ormand Goldan of New York County detailed some recent experience with this method of producing local anesthesia. A brilliant future seems to be opening up for this new adjuvant to painless surgery. There are certain disadvantages attached to the procedure as yet which may disappear as the technic improves. As it is some of the disadvantages that attach to general anesthesia are not completely done away with by this latest method, though it was hoped and promised that they would be. At times the shock of the operation and perhaps toxic symptoms from the cocaine produce an analogous post-operative condition in the patient to that familiar to us as the usual after-effects of ether or chloroform. On the whole, however, this new method is a distinct addition to our medical and surgical means of relieving human suffering and of extending without danger to certain classes of patients, as those suffering from heart and kidney trouble, all the benefit of the great advances in modern operative surgery.

Election of Officers.—The following officers were elected for the coming year: President, John A. Wyeth, New York County; Vice-President, Alvin A. Hubbell, Erie County; Secretary, Frederick Holme Wiggin, New York County; Treasurer, E. H. Squibb, Brooklyn; District Presidents, 1st, Charles B. Tefft, Oneida County; 2d, John T. Wheeler, Columbia County; 3d, Theron A. Wales, Chemung County; 4th, William H. Thornton, Erie County; 5th, J. C. Bierwirth, Kings County.

BOOK REVIEWS.

Manual of Pathology including Bacteriology, the Technic of Postmortems and Methods of Pathologic Research. By W. M. Late Coplin, M.D., Professor of Pathology and Bacteriology, Jefferson Medical College, Philadelphia; Pathologist to Jefferson Medical College Hospital and to the Philadelphia (Blockley) Hospital; Bacteriologist to the Pennsylvania State Board of Health. Third Edition, Revised and Enlarged. 8vo., 846 pages. Philadelphia: P. Blakiston's Son & Co. $3.50 net.

Research activity in every avenue of medicine brings forth so many results that each year witnesses some important shifting in mental attitude in one or another of the great problems of medical science. So constant is this striving for newer outlooks that the text of to-day on the morrow often becomes the history of a more primitive conception. Perhaps in no single department is this so apparent as in pathology,

where the labors of thousands are ever contributing their wealth of new knowledge. With these conditions it is no facile matter or light responsibility to be the author of a work on pathology. However, if the worth of a book may in any wise be measured by the appearance of successive editions within a comparatively short time, then Professor Coplin's Manual should rank among the best upon this subject. The present volume follows three years after the publication of the second edition.

Notwithstanding the many excellent qualities of the previous edition, considerable revision and addition of new matter have been made in accord with the newer standpoints. Instead of a reprint of the older text the author has conscientiously presented what he considers the best and most recent view-points in pathology. The book has been divided into three parts. The first relates to matters of technic. The chapter on post-mortems has been revised, and the same elaboration of other chapters is also noteworthy. Thus bacteriologic technic has been placed in a section by itself, and the technic of blood-examinations has been transferred to the chapter on the blood where it belongs. In the second part a consideration of general pathological problems is found; this has been enriched by liberal recasting. The remaining 396 pages are devoted to special pathology; and here new chapters have been added on the thymus body, ductless glands, muscles, bones, joints, and nervous system.

In the treatment of the subject the method has been along the traditional lines; the purely objective subordinates the reflective side. This seems unfortunate. A more philosophic presentation would commend the book to the more thoughtful and lead others into the by-ways of higher interpretation of cellular activity. However much we may differ with the general plan and some matters of detail, it must be conceded that this Manual will prove wholly satisfactory to a large class of readers interested in the morphological phases of pathology alone. The mechanical part of the book is good, and the addition of many new illustrations and some colored plates enhance the elucidation of the subject very materially.

Traité de Médecine et de Thérapeutique. Par MM. P. Brouardel, Doyen de la Faculté de Médicine de Paris, et A. Gilbert, Professor agrégé à la Facultié de Médecine de Paris. Tome Septième. Maladies du Nez, du Larynx, de la Trachée, des Bronches et des Poumons. Paris: J. B. Ballière et Fils.

Brouardel's and Gilbert's Traité de Médecine is too well known to need an introduction. As a system it compares very favorably with those of Nothnagel and Allbutt, although not attempting the monographic completeness of the former.

In the present volume of nearly a thousand pages, disease of the nose, the larynx, trachea, bronchi and lungs are considered. The symptomatology of diseases of the lung is very well handled with a clearness and comprehensiveness characteristic of the best French work. The subject of different types of expectoration, the color, tenacity, shape, microscopical and chemical characters, occupies, for instance, some ten to twelve pages, all of which is distinctly practical and bears directly on the diagnosis of the respiratory conditions. The chapter on pneumonia by L. Landouzy is a very able presentation. Twenty pages are devoted to treatment. Grancher and Barbier have given a monograph on tuberculosis which compares favorably with those of Strauss and Cornet.

As a system this represents the best work of the French school, a school which is, we believe, being overlooked by many in their eager rush for voluminous German monographs.

Injuries to the Eye in Their Medico-Legal Aspect. By S. Baudry, M.D., Professor in the Faculty of Medicine, University of Lille, France. Translated by Alfred James Ostheimer, Jr., M.D. Revised and Edited by Charles A. Oliver, A.M., M.D. With an adaptation to the United States by Charles Sinkler, Esq., Member of the Philadelphia Bar. The F. A. Davis Company, Philadelphia, New York, Chicago, 1900.

It is well known how often injuries of the eye occur in the industries and manufactures. As they often give rise to dimness of vision or sometimes to complete blindness and so become the subjects of damage suits, the value of this little book will be thoroughly appreciated. The translation is excellently done and the editorial revision has been thorough. The fact that Dr. Oliver thought it worth reproduction in English is of itself an assurance that the book is thoroughly practical.

The Medical Diseases of Childhood. By Nathan Oppenheim, A.B., M.D., Attending Physician to the Children's Department of Mt. Sinai Hospital. 8vo., 653 pages. Illustrated. New York and London: The Macmillan Company.

The author of the Development of the Child, already reviewed in our columns, has tried something more ambitious in this present volume. He has, moreover, given the medical profession something new in the way of a text-book which cannot fail of commendation. The old-fashioned dry statistical mode of presentation has been cast aside and a book with a more narrative and descriptive text is given which in many ways is to be commended. From the pedagogic side we believe the book disappointing. The author has omitted many of the clinical features and substituted histo-pathologic details. The point of view is certainly open to discussion, but the recognition of the external features of a disease process is certainly more important than a knowledge of minute post-mortem alterations. Even these are faultily presented by microphotographs which, as a type of illustration, we be-

lieve are a great mistake. They no doubt are attractive to the taker who has seen the originals and unconsciously fills in the details by suggestion, but for the outsider we consider them for the most part worthless. The book we believe lacks balance. The rarest and most peculiar diseases, while of great scientific interest, are dilated on, especially their pathology, to the detriment of the more common ills of childhood. This being said, however, it is not meant to convey the idea that this feature derogates very largely from the value of the book as a whole. It is really an excellent exposition of the general subject of medical diseases of children. The work from the standpoint of the bookmaker's art is all that could be desired.

Transactions of the American Dermatological Association. Twenty-Third Annual Meeting. Official report by George Thomas Jackson, M.D., Secretary. Concord: The Rumford Press, 1900.

Although poor paper and a paper binding give a cheap appearance to this book, its contents are furnished by some of the leading skin specialists. M. B. Hartzell reports cases with areas of keratosis on the palms, soles, back and abdomen, believed to be due to arsenic, and in which epitheliomata subsequently developed. L. D. Bulkley gives a study of the urinary excretion in eczema, acne, pruritus, and other skin diseases. No special urinary changes appear to have direct connection with any particular skin lesions, but the findings indicate that there are errors in nutrition and metabolism which affect the skin. J. T. Bowen describes two epidemics of alopecia areata in a girl's school; S. Sherwell contributes on congenital dermatitis herpetiformis, and on the treatment of scabies. Several articles follow on macular leprides, infection in leprosy, indurated erythema with necrotic granuloma, epidermolysis bullosa, etc. Geo. T. Elliott opens a general discussion on "The Rôle of Pus Organisms in the Production of Skin Diseases," by an exhaustive tabulation of the pus-producing germs, and the pustular diseases. He separates the affections in which pus is an essential factor from those in which pus is merely secondary, such as scabies, pustular eczema, pustular syphilis, etc. T. C. Gilchrist makes a study of vesicular and pustular skin lesions, and describes a new branching organism, the bacillus (?) acnes, as the most frequent germ found in the pustules of acne vulgaris. Each paper is thoroughly discussed by the other members, and a number of photographic illustrations add to the value of the work.

BOOKS RECEIVED.

Operative and Practical Surgery. For the use of Students and Practitioners. By Dr. Thomas Carwardine. 8vo., 661 pages. Illustrated. John Wright & Co., Bristol.

Manual of Pathology. Including Bacteriology, the Technic of Postmortems, and Methods of Pathologic Research. By Dr. W. M. Late Coplin. Third Edition, Revised and Enlarged. 8vo., 846 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia. $3.50.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Dr. H. A. Hare, assisted by C. A. Holden. Vol. III. September, 1900. Diseases of Thorax and its Viscera, Skin and the Nervous System, and Obstetrics. 8vo., 408 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York.

A Treatise on Mental Diseases. Based on the Lecture Course at Johns Hopkins University, 1899, and Designed for the Use of Practitioners and Students of Medicine. By Dr. H. J. Berkley. 8vo., 601 pages. Illustrated. D. Appleton & Company., New York.

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THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

THE CITY AND ITS CONSUMPTIVE POOR: A PLEA FOR A MUNICIPAL SANATORIUM OUTSIDE OF THE CORPORATE LIMITS.[1]

BY ALFRED MEYER, M.D.,

OF NEW YORK.

IT is just one year since I had the honor of addressing you upon the subject of the State care of the consumptive poor, and of pointing out to you the worthy example of Massachusetts that had been so splendid a pioneer in this work and in this country. Since then, those interested in the welfare of this unfortunate and neglected class of patients have had abundant cause for rejoicing in that the State of New York was finally induced at the last session of the legislature to commit itself to the principle of State aid by the appropriation of $50,000 for a State sanatorium. The commission appointed by the Governor to select a site has worked hard and conscientiously during the summer. Twenty-six available sites at widely-distant points in the Adirondacks were inspected and quite recently a decision was finally made in favor of Lake Clear. In spite of delay caused by the opposition which has developed against this site, there is a strong probability that within the next eighteen months the State of New York will have reared its first sanatorium for the cure of incipient tuberculosis, and, by so doing, will have increased very greatly the probability of similar institutions in every State of the Union, and both directly and indirectly strengthened the forces that are arrayed against this disease.

It is not generally known, even to members of the medical profession, that the first organized effort for a separate city institution for consumptive poor dates back to 1855, when a society, with Peter Cooper as president and Dr. Alonzo Clark and other well-known citizens as trustees, was chartered by the State and issued "An Appeal to the Inhabitants of the City and State of New York." The arguments used were almost identical with the ones used to-day.

(1) Humanitarian—"The hospital is found a truthful exponent of the Christian sentiment of the people."

(2) Inadequacy of the then existing provision—"For the victim of consumption there is no suitable refuge whatever, but, had the existing institutions abundant room for and were they in a position to receive all the cases of consumption which might apply, still there would remain the serious objection that they are not properly adapted to this purpose; that they cannot supply those means and appliances requisite for the satisfactory and enlightened treatment of this disease."

(3) Immensity of the problem, consumption taking the first rank as an agent of death, and removing the subject mainly in a productive period of life.

(4) Value of light, air, exercise, and diet, and the hopelessness of obtaining these for many cases in the "narrow confines of the dwellings ordinarily inhabited by them."

(5) Improved opportunity for studying the disease scientifically among large numbers, and thus eliminating the chance causes.

(6) Existence of such special hospitals in England.

From the charter we learn further that the hospital was to be established within ten or fifteen miles of New York City and that it was to have power to hold real and personal estate to an amount not exceeding $250,000. To these arguments of forty-five years ago the modern advocates of municipal aid have been able to add a number of others, all more or less related. Among these are: (1) The earlier recognition of the disease by bacteriological methods; (2) the greater hopefulness of arresting its progress; (3) the danger of infection.

The subject to which I invite your attention this evening is closely related to that discussed last year. There is this important difference however: Then, the object was to enlarge the State's responsibility for the indigent consumptive; my object to-night is to urge the need of greater responsibility on the part of the City. Under the law of 1899 this certainly appears justifiable from a medical point of view. Permit me to quote from the law: "Any municipal corporation, having a population, according to the last State census, of 250,000 or more inhabitants, shall have the power, whenever its Board of Health shall deem it necessary for the promotion of the health of its inhabitants, to establish, equip and maintain, outside of its corporate limits, and at such place or places within the State of New York and not within the corporate limits of any other municipal corporation, as may be determined upon under the provisions of this Act, a hospital or hospitals for the regular treatment of the disease known as pulmonary tuberculosis."

No one, certainly no medical man, will deny the advantage to the incipient consumptive if the City should avail itself of the authority granted by this law to acquire suitable territory outside

[1] Read before the Section on Medicine of the New York Academy of Medicine, October 23, 1900.

of its corporate limits and to send the patient there for treatment instead of sending him to the public institutions within the city. In certain quarters a notion has prevailed that no steps were taken under the law of 1899 because of a supposed conflict of authority between the Department of Charities and the Department of Health, or rather because the law placed the selection of the site and the construction and equipment of the hospital in the hands of the Department of Health in place of the Department of Public Charities. Nothing is further from the truth. The Department of Health stands ready to assume the labor and responsibility connected with the work, while the Department of Charities both admits the need of the work and its acquiescence in the law as it now stands. In the course of the discussion this evening, you will, I believe, hear a confirmation of this statement in the personal evidence of officers of these two departments. In fact, both departments are thoroughly imbued with the importance of the subject, and while they deplore the vastness of the problem they also admit the incalculable benefit that would accrue to the healthy and the sick alike by an extension of the work along the lines indicated in the title of my paper.

The main obstacle to action under this law has been the fear of expense. The bugaboo of expense. There is a certain immortality in this argument that would almost lead one to believe it were possessed of a soul—but there never was a more soulless argument. Still it is forever bobbing up to obstruct improvements and reforms, and, though it has been knocked in the head hundreds of times in the past and in connection with other matters affecting the welfare of the municipality and its citizens, it reappears with the serenity and the dignity and the glory of a newborn thought, but with a doggedness worthy of a better cause.

What would we think of a man who would advocate to-day a return to the old system of a volunteer fire department in the place of our present paid force, merely because it was cheaper and satisfied the needs of a smaller city and a smaller civilization? We have expanded municipally since the days when every ten-year-old lad "ran with his engine"—we have expanded in territory, in population, in the progressiveness of our ideas, but also expanded in our municipal pocketbook. The question to be asked is not, What will it cost? But, Will it pay for its cost? Permit me to quote from a recent article in the *Wiener klinische Rundschau*, written by the director of the Sanatorium at Alland, near Vienna. He says: "The great expense connected therewith, which appears to be the main argument against the establishment of municipal sanatoria, must appear in an entirely different light to every one who studies the facts—that is, to every one who studies what it costs society to support the consumptive until he dies, and what it would have cost had he been cured or at least sufficiently improved by treatment according to modern methods to permit him to return to the ranks of bread winners."

To sum up, we are spending enormous sums to-day, often without the saving of even a life, merely because it is being spent at the wrong time. Our motto should be, as was so forcibly expressed by Dr. Pryor last year: "At the right time, in the right place, in the right way, until cured; not, at the wrong time, in the wrong place, and in the wrong way until dead." I had hoped to have the City's chief financial officer discuss this matter from the point of view of the economical public servant bound by his sense of duty and by his oath of office to protect the treasury from extravagant and frivolous outlay. It was my desire that this Section should learn directly from him the financial outlays to which the City was already committed, the true status of the City in relation to the legal debt limit and the extent of the support or opposition that those interested in this movement might expect from the Department of Finance. I said to him: "You may pitch into us if you choose—but let's know at least where you stand and, if need be, let's have it out." I obtained a definite promise from him to attend this meeting, but no positive promise to take part in the discussion. I sincerely trust we may hear from him.

But let us suppose that we have allayed the fears of our opponents regarding the total of the original outlay; and let us suppose they are satisfied to allow us two or three hundred thousand dollars for this purpose—they will still fear the demand for fabulous millions in the future, to care for *all* the incipient cases, and they shudder at the thought of saddling the City with this enormous burden. Now, how much approximately would it cost the City if it were to embark upon a project of this kind? According to the Board of Health reports, there were in Greater New York during the current year, up to and including September 22d, 6079 deaths from pulmonary tuberculosis, from which we can deduce a death-rate for the year 1900 of about 8100. If we remember that the death-rate and the average duration of the disease remain about the same, we are forced to the conclusion that there are about 8100 new incipient cases each year, taking the place of those who have died. If each one of the 8100 had six months' sanatorium treatment the expense would be equivalent to the care of one-half that number for one year, or about 4000 cases. At the most liberal estimate nine-tenths of these may be classified as poor and liable to become a public charge; this reduces the total to 3645. If we allow for those taken care of by private charitable agencies the number is further reduced to about 3000, for whom buildings and equipments would cost about $3,000,000, and annual maintenance about $1,000,000. But no one has asked that this burden be assumed by the City. An appropriation of about $300,000 is all that the friends of this measure are asking for, and those who persist in claiming that this sum is but the beginning of

an endless chain of annual appropriations should recall the fact that in the future the City will be the judge of the practical value of its first investment.

The claim is made that the proposed measure will not eradicate the disease. Is this a reasonable objection? Because we may not be able to eradicate the disease, shall nothing further be done toward limiting its spread and toward diminishing its death-rate? This philosophy of sitting down and waiting for the millennium to come, this philosophy of wanting to do nothing because you cannot do everything, will in my humble judgment scarcely appeal to a people as practical as the American people. It seems very much like wanting to treat nobody because you cannot save everybody—a doctrine which surely my colleagues of the medical profession will be slow to accept; otherwise, since they cannot eradicate death, they might as well give up the practice of medicine and go to teaching music or to farming, if you please. We may be justified in being conservative, but this is not conservatism; it is pessimism of the rankest kind, and pessimism, as Dr. Van Dyke very justly says, "never gets anywhere. It is a poor wagon that starts with creaking and groaning."

Some fear the opening of City institutions for a multiplicity of disease. For instance: Why not a City hospital for cancer? And if not, why not? I should answer that cancer is not so prevalent as pulmonary tuberculosis, that provision for its care is not so inadequate, and, most important of all, that cancer has not been proven to be communicable and therefore is not a menace to a healthy citizen.

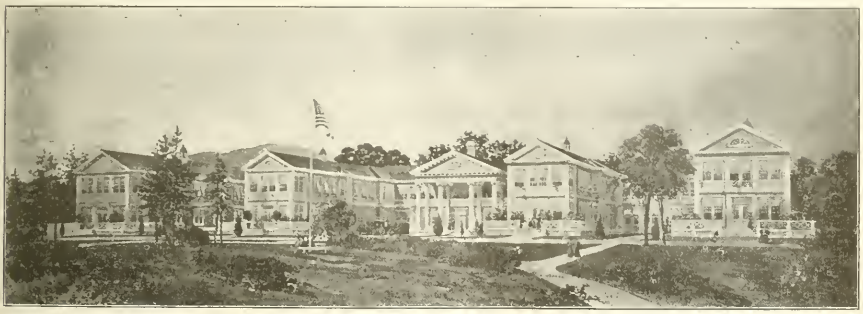
Some may raise the cry of excessive paternalism and the paralyzing of individual effort, as they did against the movement for State care. In reply I may state that in the very midst of this agitation for public aid, the directors of the Montefiore Home of this city—private citizens, mind you—in place of waiting for action on the part of the city, have planned and pushed to completion at Bedford Station, Westchester County, a sanatorium, where 160 incipient consumptives can be cared for in accordance with modern methods. While we have that type of philanthropists among us, we need have no fear that the hand of private charity will be palsied.

Having answered the objections allow me to tabulate a few cogent reasons why, in my opinion, the proposed hospital should be established.

(1) The problem is an enormous one and requires the union of all forces, municipal, State and private.

(2) There is no doubt that the expressed sentiment of the profession in this city is in favor of the plan. Let me remind you that in November, 1899, the President of the State Board of Health sent a copy of the bill under which I am advocating action to 5000 physicians in New York and Brooklyn, and that out of 1512 answers received (which large number in itself was evidence of unusual interest) there were 1500 answers in favor of and 12 opposed to action being taken. A more striking endorsement of a public measure has rarely, if ever, been reported.

(3) The increased hopefulness of the medical profession of the curability of the disease. For proof of this, I need only point to the results of sanatorium treatment coming to us from all parts of the world, and to the establishment of sanatoria by German Invalid Insurance Companies, as a life- and money-saving measure. The results in Germany have been so favorable and have stimulated the erection of sanatoria to such a degree that about 20,000 incipient cases can now receive treatment for three months each, and 72 per cent. of these are returning to the ranks of wage-earners (Pannwitz, *Berlin. klin. Woch.*, No. 30, 1900).



Country Sanatorium of the Montefiore Home for Incipient Tuberculosis at Bedford Station, Westchester Co., N. Y.

(4) The inadequacy of public and private endeavor. Under this head let me offer the following evidence:

With 8000 annual deaths from consumption in Greater New York, we may fairly deduce that the total number of consumptives living in all stages at any one time reaches 25,000, and probably the number is nearer 30,000. A census of all the cases of phthisis in all the hospitals, public and private, in Manhattan and The Bronx,

taken on January 20, 1899, showed only 1010. A study of the figures from the boroughs of Brooklyn and Queens may increase the total by about 100.

Manhattan and the Bronx.			
Census of Tuberculosis cases in Hospitals, January 20, 1899.....			1,010
New cases	548		
Cases previously reported.....	462		
Tuberculosis cases reported by Institutions to the Department of Health during year 1899.....			10,178
Bellevue Hospital	1,008		
Bellevue Dispensary	433		
Metropolitan Hospital	907		
City Hospital	308		
Harlem Hospital & Dispensary....	57		
Gouverneur Hospital & Dispensary.	191		
Total		2,904	
Duplicates, or of this number there had been previously reported....	867		
Other institutions, physicians' cases and sputum examinations..		7,274	10,178
Duplicates	1,605		
Total number of duplicates.....	2,472		
Total number of new cases.....	7,706		
			10,178

In addition a census taken in the Department of Charities, Manhattan and The Bronx, January 1st and October 8, 1900, showed an average of only 250 consumptives, and if we include the cases paid for by the city at Seton Hospital it increases the total number of cases charged to the City to about 365. There are two conclusions to be drawn from these figures: One is that the City is doing insignificantly little, and the other is that private charity is doing twice as much. The figures are even worse than they appear, for a very large proportion of the cases are far advanced in the disease and taken to the hospital to die, *and they should not be allowed to obscure the problem of incipient and hopeful cases*, for whom primarily the out-of-town institution should be established. In proof of this statement I offer the following death-rate among the cases in the Department of Charities, including the Almshouse, Bellevue, City, Fordham, Gouverneur, Harlem, and Metropolitan Hospitals:

Cases of Tuberculosis Treated in Public Institutions in Manhattan, the Bronx and Brooklyn.

Institutions.	*No. remaining Jan. 1, 1900.*	*No. of beds assigned.*	*No. of cases Oct. 8, 1900.*	*No. of cases Jan. 1, 1900, to Oct. 1, 1900.*	*No. died Jan. 1, to Oct. 1, 1900.*
Almshouse	116	120	82	83	80
Bellevue Hospital....	14	40	21	487	98
City Hospital.....	85	..	82	482	272
Fordham Hospital....	..		..	16	3
Gouverneur Hosp'l.	..	..	..	139	12
Harlem Hospital....	..	..	..	90	4
Metropolitan Hosp'l.	60	31	31	542	166
	275	191	216	1839	635

Out of 1839 cases admitted to these institutions from January 1st to October 1st, 1900, there were 635 deaths. Out of 3050 cases admitted to 26 private hospitals in Manhattan, The Bronx and Brooklyn, in 1899, 914 died. In further proof I also offer the following extract from the Fifth Annual Report of the Seton Hospital, 1899: "The great majority of the cases sent by the Board of Health were cases of advanced disease." Let us add to this institutional evidence of the present inadequacy the experience of hundreds of physicians practising in this city, each one of whom is burdened with the care of cases which are hopeful when first seen but become hopeless, because at present the right thing cannot be done by them; let us add the evidence offered by workers in the tenement sections in the city, by the University Settlements, the Charity Organization Society, the United Hebrew Charities, the Association for Improving the Condition of the Poor, some of which organizations frankly admit that they are swamped by these cases, and we are forced to the inevitable conclusion that with all its mercy, with all its generosity, New York has not yet done its full duty.

Cases of Pulmonary Tuberculosis Treated in Private Hospitals in Manhattan, The Bronx and Brooklyn.

	Hospital.	*Year.*	*No. treated.*	*No. died.*
1.	Montefiore	1899	204	53
2.	Seton	1899	434	138
3.	Mt. Sinai	1899	72	13
4.	Home for Incurables...	1899	15	6
5.	St. Mark's	1899	13	..
6.	St. Luke's	1899	220	82
7.	Beth Israel	1899	9	..
8.	Trinity	1899	12	..
9.	Colored Home & Hosp.	1898	24	14
10.	Post-Graduate	1899	18	.
11.	J. Hood Wright Mem'l.	1899	17	..
12.	St. Francis	1899	136	7
13.	Homeopathic	1899	?	..
14.	Loomis Sanit'm (City)	1899	135	38
15.	German	1899	81	7
16.	Presbyterian	1899	?	..
17.	Columbus	1899	14	1
18.	Roosevelt	1899	45	12
19.	New York	1899	50	10
20.	St Joseph's	1899	1500	529
21.	St. John's	1899	..	..
22.	St. Peter's	1899	..	.
23.	Brooklyn	1899	40	..
24.	Methodist Episcopal ..	1899	10	3
25.	Orthopedic	1899	..	1
26.	Red Cross	1899	1	..
			3,050	914

(5) The disease is a menace to public health. I need not dilate upon this phase of the question before an audience of this character.

(6) An object lesson will be given by New York to those other municipalities in the State to which the same authority has been given, as yet, however, barren of results.

(7) There will be great value in the hygienic education of the patients and their training in the proper distribution of their sputum will diminish the spread of the disease.

(8) The money value to the City of lives saved will be millions of dollars, whether estimated by what it costs to rear and to educate an individual, by what it costs to care for dependent widows and children, or by the law once upon the statute books of this State, valuing a life at $5000

(9) Let me remind the members of this Section that at a general meeting of the Academy of Medicine, held on December 21, 1899, a resolution favoring the establishment of a municipal sanatorium was indorsed. It remains to devise means for furthering this plan, so pregnant with hope for the consumptive poor, and of arousing our public officers into action. In the practice of our profession, than which there is none nobler, the prevention of disease, the prevention of avoidable suffering and its lenghtening chain of misery are among its highest aims. If each one of us in his private, in his public and in his professional life preaches the need of further municipal action, the agitation *will* and *must* bear fruit.[1]

801 Madison Avenue.

REPAIRING THE ABDOMINAL WALL IN VENTRAL HERNIA: A NEW OPERATION.

By CARL BECK, M.D.,
OF NEW YORK.

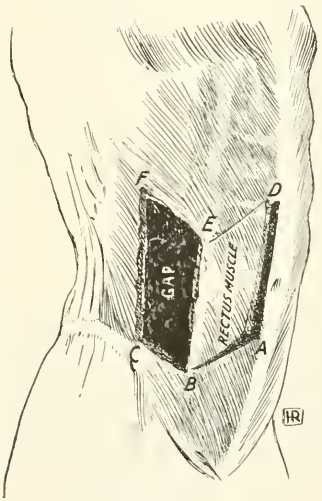
As long as the opponents of early operation in appendicitis are numerous in the profession, hernia as a sequel will continue to be a frequent experience. In an operation too long deferred the large size of the incision, the extensive exposure and the wide packing that are necessary, are quite sufficient causes for the imperfect agglutination of the peritoneum as well as of the muscular and aponeurotic layers of the abdominal wall. Thin connective tissue fills up the hiatus; and as soon as the patient gets up, intra-abdominal pressure produces a hernia.

Sometimes a broad elastic-webbing band with a well-fitting pad may prevent eversion; but in most cases an operation for the repair of the incisional hernia is required. Under ordinary circumstances, and if much time has not elapsed since the operation for appendicitis was performed, excision of the scar, careful exposure of the peritoneal, muscular and aponeurotic layers, and the removal of adhesions between the peritoneum and the underlying intestine, will completely restore the integrity of the abdominal wall; but in complicated cases, and especially when much time has elapsed since the operation for appendicitis, atrophy of the muscular layers having taken place at the same time, the muscular deficiency may be so great that approximation of the muscular layers is out of question.

In such a desperate case I have had to resort to an extensive plastic operation in order to cover the gap. The patient was a man, twenty-three years of age, on whom, four years ago, I had performed an operation for appendicular abscess seven days after the onset of the acute attack. Peritonitis, while not general, still had lost its circumscribed character. The cecum was covered with fibrinous clots which needed extensive exposure and wide packing with iodoform gauze. The patient insisted upon leaving the hospital before the wound was closed completely, and there was no opportunity for seeing him again until three months ago, when he presented himself with a ventral hernia in the scar of the appendicular incision. This caused considerable digestive disturbance. The intestine could be felt immediately below the cicatrized integument to the extent of the palm of a man's hand.

Taking the most minute aseptic precautions, the scar was excised and the peritoneum exposed. After a few adhesions uniting the parietal peritoneum with the cecum were disposed of and the different layers of the abdominal wall were carefully denuded, it was found that an approximation of the muscular tissues was impossible. Muscular tissue was absent; not one fiber could be detected between the margins of the rectus muscle and the anterior superior spine of the ileum. Having ascertained by previous experiments (Medical News, September 16, 1899) how well the rectus muscle tolerates even an extensive loss of substance, I concluded to utilize its superficial layer as a reverted flap for the covering of the gap. For this purpose the rectus muscle was incised alongside its internal margin (Fig. 1, A-D) to the extent of nearly

Fig. 1.



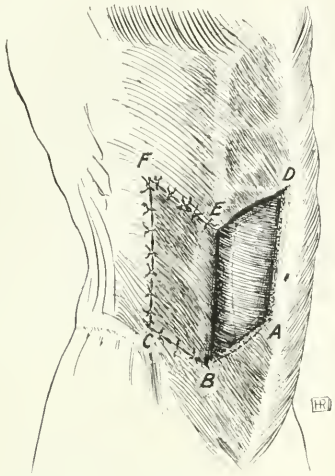
Showing Gap in Muscle.

half its thickness. Two transverse incisions, connecting the outer and inner margins of the muscle (A-B and E-D), and extending down the substance of the muscle to the same extent, the lower one being as near Poupart's ligament as possible, and the other one below the umbilicus, completed the outlining of the flap, which was carefully lifted. Beginning at the internal marking of the incision (A-D), the upper layer of the fibers of the rectus muscle was also divided, until the flap, so formed, could be lifted near the outer margin (B-E) with which it remained con-

[1] See discussion p. 671.

nected in the manner of a hinge. The reverted flap was now fastened to the muscular remnant (Fig. 2, A-C and D-F) with iodoform-silk sutures. The

Fig. 2.



Showing Gap Closed with Flap.

tiers uniting the fascia then consisted of formalin-catgut, which was also selected for the subcutaneous suture. Four relaxation sutures, consisting of iodoform-silk, were applied through the skin three-quarters of an inch distant from the wound-margin, so that there was no direct contact with the wound-line.

Fig. 3.

Showing condition of patient three months after the reversion of the rectus muscles and one month after the operation for hernia.

Recovery was uninterrupted. Where the gap and the attenuated muscular layer were previously established, a thick firm wall could be found. Two months after the operation no protrusion occurred while the intra-abdominal pressure was increased by the efforts of coughing.

Another interesting feature of the case was the coexistence of a congenital inguinal hernia of the same side, for which I performed radical operation (Fig. 3) after the principles emphasized in my modified operation for inguinal hernia (Medical News, September 16, 1899). The patient is now perfectly well.

A PLEA FOR THE MORE FREQUENT AVOIDANCE OF EXSECTION OF THE OVARIES IN CONNECTION WITH OPERATIONS UPON DISEASED TUBES.[1]

By PHILANDER A. HARRIS, M.D.,
of Paterson, N. J.

For the interests of this paper it is convenient for us to regard the uterus as a kind of sinus having attached near its top two additional sinuses, which we call the Fallopian or uterine tubes. When gonorrhea or other disease infects the uterus it is liable to extend to the Fallopian sinuses, and when thus established comfort and health are more or less encroached upon, if, indeed, life is not endangered.

To effect a cure of chronic suppuration in the Fallopian sinuses we have resorted to a variety of exsective and amputative operations. None of them, even the most mutilating, in which the uterus, both tubes and ovaries are sacrificed, can be relied upon to effect a symptomatic cure in every case. The operation most resorted to for suppuration of these sinuses has been the so-called salpingo-oophorectomy by abdominal incision; and inasmuch as both the Fallopian sinuses are generally found diseased, the operator usually sacrifices both tubes and also, as a matter of routine, both ovaries.

Many gynecologists who began as we all did, by removing the ovary with each diseased tube, are still doing so as a matter of routine in every case, and occasionally one is still found who continues to justify his practice in this relation. Others having been convinced that the tubal sinus is the real structure at fault, and that the ovary in a large proportion of cases is only the contiguous and unwilling participant in the suppurative process, have in their later practice confined their ablations to the tube, and have only now and then sacrificed the ovary or ovaries while amputating diseased tubes. I cannot yet say that more than a very small proportion of the gynecologists are removing the Fallopian tubes and leaving the ovaries in most of their cases, but I am entirely convinced that many are doing so and, I am assured, with a fuller measure of satisfaction with their results than were obtained in their earlier and more mutilating operations.

[1] Read before the Section on Gynecology and Obstetrics of the American Medical Association, Atlantic City, N. J., June, 1900.

I wish in this paper to divide all the operations for ablation or removal of the tubes into two general classes and use a term or expression for each class. Class 1 embraces any operation in which more or less of the tube is removed by cutting it off at one point or another between its fimbriæ and the uterus, and I shall refer to any such as an *amputation of the tube*. Class 2 embraces the practically complete removal of the tube which can only be effected by an encircling or elliptic dissection around the tube and into the uterine tissue and a severing of the lumen of the Fallopian sinus at its termination with the uterine mucosa. This incision in the wall of the uterus is then united with close suturing. Such an operation I shall refer to as an *excision of the tube*.

Physiological Functions in Interest.—The continuance of menstruation depends on two conditions; the presence of the uterus, and an ovary or, at least, a portion of an ovary. With these conditions present excision of both tubes neither arrests menstruation nor ovulation, but it, of course, renders pregnancy impossible. The occurrence of pregnancy depends on the presence of an ovary or a piece of an ovary and the uterus, with at least one Fallopian sinus communicating with the cavity of the peritoneum. Pregnancy is possible, and there are repeated instances of its occurrence, through the medium of open Fallopian stumps from which the tubes were amputated close to the uterus. The relative frequency of intra-uterine pregnancy after simple bilateral amputation of the tubes cannot be determined until the practice of removing the ovaries in these cases comes more in vogue. Busy gynecologists who have ceased to sacrifice the ovary while performing bilateral amputations of the tubes, are beginning to report the subsequent occurrence of pregnancy. The small ostium abdominale of a tubal stump, with its unobstructed sinus, is, however, far less liable to receive the ovum and pass it to the uterus than the ostum at the fimbriated extremity of a normal tube.

The complete removal of both ovaries and all ovarian stroma promptly eventuates in the arrest of the functions of menstruation and ovulation. The surgical arrest of the function of menstruation at any age is followed by more or less of the disagreeable nervous phenomena which attend the normal cessation of menstruation at the change of life. The quality of sexual instinct, an item of woman's existence which enters more or less into her life and behavior in various ways, is probably in no way impaired by simple removal of the tubes, but I am thoroughly convinced that removal of the ovaries very often lessens the intensity, while it also often speedily terminates the existence of this quality in women.

With the exception of operations for ovarian tumors, about all of the earlier operations of the uterine appendages consisted in seizing the ovary and tube through the abdominal incision, forming a pedicle in such manner as to secure as much of the diseased tube as possible, and encircling, or transfixing and encircling, the stump thus formed with a ligature, and cutting off the mass on the distal side of the ligature. In all such operations more or less of the uterine end of the tube was left. In some cases a small part of the ovary was unintentionally left. Of the thousands upon thousands of women thus operated on a goodly portion were cured of dysmenorrhea, pelvic pain and general morbidity which rendered life burdensome before operation. Menstruation generally ceased, but in a certain small percentage of cases where ovarian stroma was left, it continued, while pregnancy followed in a very few isolated cases.

Patency of Fallopian Tubes After Amputation.—One would suppose and many have claimed that a tube ligated and amputated on the distal side of the ligature will remain closed. In contradiction to this is the occurrence of pregnancy after bilateral amputation, and the report that in the few patients in whom the stumps have been afterward examined they have been found patent or open. The failure to effect by amputation a symptomatic cure in a certain percentage of cases is doubtless due to the fact that the amputated tube reopens, and that septic exudations continue or recur from subsequent infections. Dr. Bovée has demonstrated with several specimens a condition of open tube-stumps after the ordinary ligature and amputation.

I am strongly inclined to believe that further investigations will demonstrate that a very large proportion of the stumps of tubal amputations either have, or, later acquire an ostium abdominale and an unobstructed, although short, Fallopian sinus to the uterine cavity; and that this contractured yet open sinus is the occasional avenue of stump-infection or reinfection which operators have sometimes characterized as neuralgia of the stump when the patient returned with some of her pre-operative symptoms.

Diseased tubes, as a rule, are recognized readily by the eye, and their removal by amputation eventuates generally in a symptomatic cure. These septic or suppurative processes are usually carried on in the tube and, although they often extend to adjacent parts, particularly the ovaries, the ovaries are unwilling, and in many cases only temporary participants in this suppuration. An ovary with the fimbriæ of a suppurating tube agglutinated to its surface may safely evade infection until a Graafian follicle bursts within its grasp; by which event infection of the ovary and the development of an ovarian abscess is liable to occur.

Although the ovary is often engulfed in exudates, and at times both ovaries are completely covered in, the function of menstruation continues, and, if we dig out and amputate or excise a tube and save the ovary, we also retain for the woman the function of menstruation. If while amputating the tubes we free the ovaries from many of the adhesions which may have hidden them from view, saving them for the woman, they will show little or no disposition to harbor suppuration as do the tubal sinuses which infect

them. In other words, it is the unwilling participant in the suppurations so common in the tube. At a meeting of the American Gynecological Society, in Boston, two years ago, I heard Dr. Howard A. Kelly remark, while discussing the papers of Drs. Dudley and Bovée, as follows: "There is a great deal of talk about chronic ovaritis, but there is nothing in it, for it is a condition which is very rare. Many of us sacrifice the tube or an ovary for purely technical reasons, for it is easier to pull it up and cut it off, as it is usually involved in inflammatory adhesions. We should always make an effort to save the tube or some portion of it, so that the theoretical hope of pregnancy may be retained for the sake of the patient."

Less than three years ago I abandoned the routine practice of removing the ovaries with their diseased tubes. Since that time it has been my custom when ablating diseased tubes to spare to every woman as much ovarian tissue as possible. I can now recall but two instances in which a surgical menopause has followed double tube amputation or excision during this time. I have as large a percentage of cures as was obtained by the coincident sacrifice of the ovaries and I have a grateful class of women, most of whom appreciate the advantages of retaining the function of menstruation. One patient, however, was not entirely satisfied with my having retained for her the function of menstruation and ovulation. During her husband's absence from this country, I amputated both tubes, leaving both ovaries. Six months after the operation, and before her husband's return, she presented herself to me with the appearance of pregnancy. Upon my diagnosis of probable pregnancy, she at once told me that she little thought pregnancy possible to one who had been operated on as she had been; I assured her that it was possible and that I believed her pregnant. Her physician, a man of high standing, who referred her to me for removal of tubes, has since informed me that she had an abortion at about two and a half months, and that it occurred a short time after her visit to me.

This brings to mind the question of how far the patient herself should be consulted in regard to what she should keep or part with when she submits to the knife. The married woman with children, as a rule, does not wish more. The gynecologists, to gratify the wishes of this patient may sacrifice her ovaries, and with it every possible chance of future pregnancy. Her husband dies, she again contemplates matrimony, but she is reminded that she is not a perfect woman, and must make known to the other contracting party her sterility, or possibly afterward suffer the disadvantage of annulment of her marriage contract. For her to make known to the prospectively contracting party her condition of sterility is to lose, in some instances, the re-marriage.

The peculiar social life of some women is such that for the time being they look with favor upon an operation which will sterilize them. There is, however, a certain small percentage of prostitutes who will yet change their lives, marry, and be happy. If for the reason that such cases are but isolated ones, we sacrifice menstruation for the whole class, and with it every possibility of pregnancy, our surgery in this relation may prove a contributing hindrance to their reformation, respectability and happiness.

The woman of respectability, of eighteen, twenty-five, thirty, or even thirty-five, surgically cured of her pelvic disease, but conscious that she is not as other women are, in that she does not menstruate, feels herself personally inferior to womankind, and this feeling of personal inferiority may be so strong in her that it will become a powerfully contributing factor in her general condition of unhappiness. I know of many such instances. Some of them were my patients, operated years ago. I am convinced that sufficient ovarian stroma may be saved to maintain menstruation and ovulation in at least ninety per cent. of all the bilateral tubal amputations and exsections for the so-called purely inflammatory lesions of and primarily in the tubes, and that a cure of the pelvic pains does not depend on the removal of the ovaries, but on a removal of the disease from its pathologically natural habitat, the Fallopian and uterine sinuses. Dysmenorrhea and the pains which precede and follow menstruation, and which are so common in tubal disease, must be particularly inquired into. If these pains had no existence prior to the development of tubal disease, they will probably disappear when the tubal disease is removed and the ovaries need not be sacrificed to effect a symptomatic cure. I have had many cases with post-operative history exemplifying this statement.

In the past, as now, the sick and afflicted relied upon our propositions and accepted our advice. We acted in the light of what we supposed we knew and, while we were praised for our good offices in that relation, we brought the public to believe that almost any kind of a suprapubic section of the female abdomen carried with it the removal of the ovaries and the consequent arrest of menstruation and sterility as a matter of course. The public by instinct, as it were, has wisely resented our invasion of its rights, and I am happy to believe that we can now see our way to effecting as many cures with far less mutilation than in former times, while we can also maintain for almost all these women sufficient of the several and particular qualities to enable them to remain and rank as so-called perfect women.

A woman for whom we have spared sufficient ovarian stroma to continue the phenomena of menstruation and ovulation, but from whom we have exsected one tube and amputated the other, is not very likely to conceive. Still, we cannot say of her that pregnancy is impossible. If we have saved for her the ordinary and outward evidences of the normal functions of woman, and

if for her conception is at all possible, she may rank as technically perfect in womanhood, and without fear of invalidating a contract of marriage should that be made without reference to her past medical history. In view of these facts, for I believe I have presented no claims which cannot be substantiated, we should spare to as many as possible menstruation and ovulation, and also, for whatever it may be worth, the practical although slight hope of conception.

THE IMPORTANCE OF REST IN PULMONARY TUBERCULOSIS.[1]

By CARROLL E. EDSON, A.M., M.D.,
OF DENVER, COLORADO.

With our present understanding of the natural history of pulmonary tuberculosis we must appreciate more and more the necessity not only of early recognition and of securing the largest amount of fresh air and sunshine in its cure, but of the physician having constant and close supervision of all the details of the nutritional and hygienic life of his patient. None of these details can be neglected wisely, but I wish to emphasize especially the importance of securing prolonged rest, for the reason that most patients in the early stages of pulmonary tuberculosis take an amount of active exercise which is liable to do them harm.

In the enthusiasm of securing the greatest abundance of fresh air and sunshine, the error is made of assuming that outdoor life necessarily means walking, riding or bodily activity; and many physicians even advise such exercise in direct conflict with the indications from the pathology of the disease, although they habitually follow the same indications in a case of joint tuberculosis.

The obvious and unquestioned treatment of a case, however incipient, of tuberculosis of the spine or of any joint is the immediate immobilization of the part; the maintenance of complete physiological rest during such time as may be needed for the inflammatory process to subside and the damaged tissue to be walled off. In tuberculosis of the lungs, on the other hand, the local lesion is not thus happily apparent at the start and the disguise of a simple general debility with a little hacking cough leads to forgetfulness of the true pathological state. And yet tuberculosis of the lungs has a natural history, similar to that of a joint infection; the pathological process is in all essentials the same, the microscopical details differing only in the histological structure of the affected tissues.

The indications in each are the same, namely, to secure local tissue rest while the protective changes are secured. The better prognosis of a joint tuberculosis is due in large part to this obviousness of the lesion and to the greater possibility of securing quiet, for a joint can be immobilized while a lung cannot. We need not walk. The maintenance of life necessitates some use of the respiratory apparatus.

Difficulties in the way of complete suspension of function in the lung should not cause us to ignore the indications so clearly shown. The obvious means of physiologically lessening the functional work of the lungs and thorax is to diminish as much as we can the respiratory demands of the body.

Respiration is not simply a thoracic need, but a service called on by all bodily activity. Muscular action directly increases the amount of gas exchange within the tissues and thus augments the respiratory labor. As our respiration is easier when quiet than when running, so it is less when lying at rest than when standing, by just the amount of muscular action needed to hold the body balanced. Pleural friction is less and the quieter thoracic action diminishes cough. This relieves the nervous wear, and protective tissue changes are favored.

Bodily rest is beneficial in other ways than in respiratory quiet, and for similar physiological reasons. The cardiac labor is lessened and the quick, small, irritable pulse of early tuberculosis, which, when continued, is of such evil import, depicts a waste of vital force which were better employed in the local combat against the bacillus.

The most important physiological reason for insisting on rest in pulmonary tuberculosis is the influence of bodily exercise in increasing temperature. As a physiological fact this is known, yet the knowledge is not applied in our rational therapeutics. A most convincing proof of the effect of undue bodily exercise in creating fever is the test made by Dr. J. Bapst Blake of Boston upon the contestants in the Marathon race. In an unpublished paper he says that "the temperature taken by rectum was almost invariably raised. The average rectal temperature was 102.4° F. Omitting two instances in which it was not representative of the true condition, the average rectal temperature at the close of the race was 102.8° F."

Not only our physiological knowledge but our clinical experience shows that the surest way of reducing the fever of pulmonary tuberculosis is by prolonged rest in the fresh air, and by rest I mean as near complete bodily quiet in the recumbent position as can be had. The higher the temperature the more necessary is the complete rest of the reclining position, while a slight afternoon rise is controlled by simply forbidding walking. The harmful effect of cardiac, or indeed muscular or even parenchymatous labor during high temperature needs no elucidation. One avoids it studiously in the fever from pneumonia or typhoid toxins, why call upon it in the fever due to Koch's bacillus?

All our knowledge points to an enforcement of rest in tuberculosis, and our clinical experience also, if we will but read it thoughtfully. All who have had service in a general hospital have seen case after case of phthisis in which the fever

[1] Read before the Section on Practice of Medicine of the American Medical Association, Atlantic City, N. J., June 7, 1900.

and the cough have at once and steadily diminished as a result of the quiet rest in bed and the cessation of nervous exhaustion from labor. I have little hesitation in giving the chief credit to the rest, for too commonly (in the past) the hospital care of chronic phthisis has been a tragic farce. Our clearer vision to-day of pathology and its relation to physiologic life shows us lessons which we were learning without heed.

The importance of rest and the harm of undue exercise during the active stages of the disease are especially apparent in patients coming to a high altitude for the first time. It will be agreed, I feel sure, by all whose work is at a high altitude, such as Denver, that the invalids who keep quiet at the start do best and that immediate exercise is nearly always disastrous. The additional demand on the circulation and respiration made by the thinner air is all the work it proves well to ask at first. If the patient adds to this a further call by muscular exertion—hunting, golfing, riding—the task is over great. Continuance, if not increase of fever, cough and general exhaustion are inevitable. A carefully kept temperature chart of a patient inclined to doubt the effect of exercise in reviving a partly quiescent fever will prove a most graphic argument to him and to his physician for the insistence on absolute quiet.

Let me cite only one case out of many which all can duplicate. G. B., male, thirty-seven years of age, came to Denver in January, 1898, with tuberculous disease of the upper right lung. He had no fever, no cough at night and only a little expectoration by day. His weight was 140 pounds, and his general condition fair, with little impairment of strength. Upon ill-judged advice he took much exercise, fencing for two hours every morning and walking in the afternoon until he was so tired that he had to "will" himself to do it. At the end of four weeks he had lost nine pounds, was coughing a good deal and so much at night as to materially disturb his rest. The pulse was quick and the temperature often 100° F. He looked worn and his face showed the lines of nervous tire. He was ordered to remain in a steamer-chair on the veranda, not leaving it for any reason. In three days his cough at night had stopped, and in three weeks he had gained ten pounds.

The objections usually raised at first to such orders for complete rest are two: First, the mental and moral irksomeness, "I cannot stand it." Experience, however, shows that the patient does stand it very well. I have tried it myself. There is an inertia of action as well as of rest, but with honest trial and kindly device on the physician's part it can be overcome. The second objection is the possible interference with digestion and elimination. This, too, is an unfounded fear. The digestive ability of patients undergoing this quiet during the period of fever and pulmonary activity is astounding at times even to one who is accustomed to it. Two pounds' gain per week for ten weeks is not unusual and I have seen eighteen pounds gained in three weeks without the least disturbance. Any signs of intestinal sloth are more easily remedied than the harm from extension of tuberculous disease induced by overexercise.

The more one sees of the varying picture of tuberculous disease, the more impressed he must become with the importance of giving increasing conscientious attention to every detail of the invalid's life. The amount of exercise, even to the closest measure, must be studied and controlled. As long as there is fever there should be prohibition of exertion. The degree of rest, whether it be continued recumbency or half-day reclining, or simple limitation to a veranda, is a detail for each case, but a detail which should be regulated. The duration of such quiet depends on the results. The more thoroughly it is carried out the sooner the pulse and temperature will become normal. With the cessation of active disease the amount of exercise allowed may be gradually increased, the effects being carefully measured by the temperature, the pulse, the cough, and the weight.

PRESENT STATUS OF INTERSTATE RECIPROCITY CONCERNING LICENSES TO PRACTISE MEDICINE.

By EMIL AMBERG, M.D.,
of Detroit, Michigan.

The medical profession has had the same task since the beginning of civilization. Diseases are practically alike all over the world, and among civilized nations a human life is valued equally high in all countries, or, at least, it should be.

The medical profession, as such, does not participate in the race for national supremacy. The only limit for the standard of the medical profession is the limit of human ability. The quality of the medical profession depends upon the quality of the medical schools. It is an open secret that in the United States the conditions of medical education, in general, are not such as they should be. Whoever is familiar with the literature on the subject will bear me out in my statement. I call attention only to the refusal of diplomas issued by certain medical schools. The only possible excuse for the inability to provide for a medical education worthy of the advanced position the United States takes among other countries, would be economical reasons. Economical reasons, however, fail to excuse the conditions existing at present. Besides this, medical schools belong to the most necessary institutions for the people. Those controlling public affairs should direct their efforts to provide the best possible physicians for those under their care. We all know that the cause of the inefficiency of most of the medical schools can be found in the fact that a few men can get together and, with little difficulty, establish a medical school; and, further, that the diplomas of less good schools are, in the eyes of the public who do not know the difference,

just as good as those of good medical schools. In order to have some kind of control, state or territorial medical boards became a necessity. The more advanced states and territories saw that they were obliged to protect the citizens of their jurisdiction from incompetent practitioners. In this way they put themselves on a higher level than the other parts, and a division takes places which reflects most peculiarly on the weaker states and territories and on the whole country.

What stand does the medical profession take in this question? The very fact that most of our medical schools are private institutions once for all prevents us from identifying the medical profession in the United States with the medical schools, therefore, the medical profession cannot adapt itself to the medical schools; the medical schools, however, must adapt themselves to the demands of the time. It has been a matter of great surprise to me for a long time why the different pathies can get such a strong foothold in the United States. I think that one of the reasons is the following: The inefficient general education, combined with lack of thorough training in physiology and pathology, only too easily induces many physicians to let themselves be controlled by the deplorable tendency to give too many drugs. It is reported on good authority that most of the so-called homeopathists make use of some of the same drugs as we do in the same doses. They, however, do not use drugs to the same extent. This seems to me one of the reasons why they sometimes are preferred to the so-called regular physicians. We frequently underestimate the understanding of the intelligent public. It is a well-known fact that physicians in countries with well-advanced medical education, which is recognized by the public, enjoy a greater confidence than in others, and we do not find so many pathies there. A thorough training of all physicians will have the effect that the different pathies will soon lose their importance. This thorough training in physiology and pathology can, in my opinion, be reached only when the teachers can devote their entire time and energy to those subjects; therefore, they should be well paid in order to be independent of practice.

We see the question of good medical schools is, to some extent, a money question. The states and territories should do properly what most of the private concerns do improperly. If there exist laws preventing this, they should be changed. I may repeat what I said on another occasion: If a law exists which apparently is against the welfare of the community, it must be abolished. A corporation should not be allowed to hide itself behind the screens of antiquated laws.

We now have boards, state and territorial, with executive power; that means, the state and territorial boards control the products of the medical schools. But, is this sufficient? Does a short theoretical examination give a good guarantee that a candidate is thoroughly trained in a profession which is eminently practical? We certainly must answer in the negative. The next step necessary will be the control and ownership of the schools themselves by the various states or territories. If all schools were state or territorial properties they, necessarily, would soon be of equal standing. We would have equally well trained physicians, and there would be no reason for barriers between the states. Here I would call your attention to a clause in the medical laws, reading about like this: "And this Act shall not apply to any commissioned medical officer of the United States Army, Navy, or Marine Hospital Service in the discharge of his professional duties." Why cannot this clause read: "And this act shall not apply to any graduate of a college the efficiency of which is recognized by all boards of the United States?"

The good, even the excellent, work of many of the private schools is not disputed; however, it seems that these cannot excuse the system which makes it possible that so many less commendable schools can flourish. A system which allows only a single poor medical school to exist is a bad system, and it should not be tolerated. Permit me to mention in this connection the report by a committee appointed by the Superintendent of Public Instruction in Michigan, which reads, in part: " . . . have made a report in which they say they were strongly impressed with doubts as to the wisdom of chartering private medical colleges, and state it to be their judgment that if such a policy is to be pursued, the following should be required:

1. A standard of preliminary education should be provided, and a board created to examine all students before entering upon the study of medicine.

2. Some safe, uniform standard for graduation ought also to be fixed and insisted upon, as a condition precedent to a license to practise medicine.

3. The financial solvency and stability of each such institution should be more carefully guarded and insisted upon.

4. Medical colleges should not be chartered in small towns, where clinical and hospital facilities, so necessary to the proper education of a physician, are not ordinarily found.

5. A constant and thorough visitation and inspection of such institutions should be regularly made by a board of visitors competent to judge fairly of their merits.

6. The capital of every medical college should be large enough to warrant the employment of men learned in their profession, and the provision of equipment in all branches adequate to promise a proper medical course.

The committee also says that the capital stock of many of the institutions appears altogether too small to give fair promise of success. . . ."

In a similar way, the *Journal of the American Medical Association*, of May 19th, says, in part: "If there is one thing in which the American medical education leads the world, it is in its quantity, but we do not congratulate ourselves on this fact. What we need is improvement in

quality, and it would be no loss if three-quarters of the hundred and fifty, more or less, medical colleges of all sorts in this country should go out of business. Our medical colleges have been too long originated and conducted as business investments, not always for their direct returns, but to supply from their output a consulting clientele for their professors. The stock company medical college, described by a prominent neurologist in the '70s, was a caricature with a broad family likeness to many of the institutions of the time, and there are still, in some quarters, relics of the same features amongst the medical colleges of to-day."

In this place I must criticise most strongly another state of affairs in our peninsula, in Michigan, because the same conditions might be prevented in another division, and also because it bears directly on the subject under consideration, *i. e.*, the interstate reciprocity for license to practise medicine. We have in Michigan six medical schools, three of them of recent date. Among them there are three in Detroit and one in Ann Arbor. Ann Arbor is about one hour's ride from Detroit. The medical schools in Detroit are private institutions; our state medical school is in Ann Arbor. I warn all friends of medical progress and of good citizenship to follow the example set by Michigan. The state medical institution, or, at least the clinical department, should, by right, be located in a place where the students and citizens of the state derive the greatest benefit from the same, *i. e.*, in the metropolis of the state. If the clinical department of the state medical school would be located in Detroit we could expect that the private medical schools would sooner be closed. This would be in the interest of the people. Ordinary common sense demands the change. I am fully convinced that I express the sentiments of a great part of the profession in Michigan. Rhode Island does not recognize the diploma of the Medical School of Michigan, because Rhode Island does not recognize the diploma of any medical school located in a place which has less than 50,000 inhabitants. Considering all circumstances we may well ask: Is it possible to remove the numerous Chinese walls in our country, or must we admit that the licentiates who are not sufficiently qualified in one part of the country become qualified by simply removing to another part of the Union, or must we admit that the value of human life varies according to the political division? It is not necessary to indulge at length on the absurdity of such a condition.

Nevertheless, even under present circumstances the multiplication of standards is not warranted. The most desirable regulation of the license to practise medicine, we admit, would come from a national board controlling the whole of the United States. This is impossible at present on account of our Constitution. The events, however, of recent times, show that there is another remedy, and this is within our reach.

The fifty-two or more groups could immediately form combinations by bringing into effect the interstate reciprocity for the license to practise medicine. The efforts aiming at this are not of recent date. The progress, however, toward a more general adoption of the principle is very slow, for several reasons. In the first place, much preparatory work must be achieved in the single states, *viz.*, the establishing of adequate medical laws. The character of the laws does not permit, in most cases, the introduction of reciprocity. In the second place, the desire for reciprocity is not understood quite sufficiently by the profession and, especially, by the public; and, third, it has to be brought to the mind of the profession that uniformity of requirements for license to practice medicine will, necessarily, bring about a raising of the standard of requirements in almost every political division, and not a lowering of the same as has been feared by some.

Gradually the idea became familiar that the raising of the various standards might not be a less commendable part of the movement than the convenience and justice toward the profession, and, at last, it appeared that the aim toward a higher medical education is even the more important part of the whole movement. In Michigan, after the medical law had been established, it was the wish of the Wayne County Medical Society (*Physician and Surgeon*, January, 1899) to do their part toward an improvement of conditions. A committee of five was appointed for this purpose. There seemed to be great difficulty in getting the profession at large interested in the movement. After careful consideration it appeared to me that we should begin with the approval of the authorities who are entrusted with carrying out the rules governing the practice of medicine in the different political divisions. We addressed the authorities and asked them various questions, the most important of which were:

5. Would you be inclined to consider favorably the plan of entering into a state of reciprocity with other states or territories which have practically the same requirements for the license of practising medicine as your state or territory has?

6. Would you join in the efforts in working out a memorandum to be presented to the legislative bodies of the different states with the view to introducing a bill as to the subject matter, and would your secretary cooperate with us?

7. Have you any suggestions to make?

We received some kind of an answer from practically all of the states and territories.

The present situation presents itself as follows: (1) Of 52 states and territories, an examination is required in 32 (33, Texas?) and in that part of the Indian Territory which is occupied by the Cherokee Nation. (2) Favorable preliminary answers to our proposition from 38, part of Florida and part of the Indian Territory; 5 undecided, 2 unfavorable. (3) Of the combined answers, given at different times, and

partly expressing the sentiment of the political division; 40 states and territories and 2 parts of 2 other divisions answered favorably; 7 were undecided and 2 may be conditionally classed as unfavorable. (4) The laws allow reciprocity in 12 political divisions, District of Columbia, Illinois, Indiana, Maryland, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Virginia, Wisconsin. (5) Actual reciprocity exists in 2 states, New Jersey and Pennsylvania.*

I may say here that my compilation may admit of improvement. I hope that the members present will correct the same as much as possible.

If I undertake to quote some of the answers received, I naturally do this without blaming any party for the stand taken. Every opinion is honored; it is an old saying that "Out of the differences of opinion the truth is born."

All the answers have been received within a year. I have selected out of their number the following answers, or parts of answers, respecting the law.

1. *Alabama.*

Answer to Question 5. Am not prepared to commit myself on this point now. (No signature.)

2. *Alaska.*

I would say that Alaska has no laws in reference to medical practitioners, except the laws of Oregon, if the District Judge here decides that they are applicable. By the license system attached to a penal code which was passed at the last session of Congress, itinerant physicians in Alaska are taxed fifty dollars per annum. I would be in favor of making the laws as stringent as possible, so as to make it very difficult for quacks and charlatans to practise.

(Signed) John G. Brady,
Governor of Alaska.

3. *Arizona.*

So far as interstate reciprocity is concerned, we have in this territory as yet done nothing, except that we have a tacit understanding in the profession that as soon as such a step is taken in any of the states or territories we will be with them.

It has been the aim of the medical examining board of this territory to so conduct its examinations that they could take a standing with any state in the Union, and it is our intention at the present time to present to our next legislature a bill authorizing the examining board of this territory to recognize the certificates from the examining boards of other states or territories of the Union wherein a like examination is held to that which we require here.

(Signed) Wm. Wylie.

4. *Arkansas.*

Answer to Question 5. No, decidedly not, while the Chicago mills are at work.

Answer to Question 7. Boycott all of the Chicago colleges until they put a stop to their diploma mills. This is their duty to the profession throughout the country.

(Signed) H. C. Dunavant.

5. *California.*

Answer as to reciprocity favorable.

There is no work being done at the present time with the medical law, as our legislature does not convene until next winter, when an effort will be made to secure something more in accord with the present requirements.

(Signed) Chas. C. Wadsworth.

6. *Colorado.*

As our law requires no examination, reciprocity is unnecessary. However, we intend presenting a bill at the next meeting of the legislature on the lines of the Pennsylvania bill, in which, you will remember, there is a reciprocity clause. (Signed) C. K. Fleming.

7. *Connecticut.*

(See Maine.)

8. *Delaware.*

Answer to Question 5. I cannot answer this without the advice of the board.

Answer to Question 6. I think it very probable we would.

(Signed) Irving S. Vallandigham.

9. *District of Columbia.*

The Board of Medical Supervisors of the District of Columbia will issue a license to practise medicine here, without fee and without examination, to any duly licensed physician who may change his residence to the District of Columbia from any state or territory where medical laws and medical examining boards exist, if the medical laws and medical examining boards of such state or territory grant equal rights and recognition to licentiates of said Board of Medical Supervisors of the District of Columbia. The difficulties which exist in current laws in the way of the establishment of reciprocity by this Board can be ascertained by you upon examination of such laws. The requirements of this Board are sufficiently rigid to warrant the recognition anywhere of such licenses as it has issued after examination, as you will see from the accompanying summary of the regulations governing examinations. The chief difficulty in the way of reciprocity seems to be, however, as stated before, in the matter of preliminary education.

(Signed) Wm. C. Woodward.

10. *1st District of Florida.*

Answer to Question 5. Yes. I answer this as to my professional feelings.

Answer to Question 6. Yes.

* Porto Rico: Applicants who hold diplomas from respectable colleges or who have been licensed by any state board in the United States which requires an examination, are licensed without examination. (*Physician and Surgeon*, May, 1900.)

Answer to Question 7. The only suggestion that I can think of that would benefit us now is that, instead of having an examining board for each district, it would be better for all concerned to have only a state board, consisting of a representative from each judicial district, and let the candidate present himself to any member for examination and this member will notify the secretary of the board and he will then send questions (which have been previously arranged by each member in the branches on which they examine) to this member who is to do the examining; after the candidate has completed his examination then the questions on each branch shall be enclosed directly to the members who examine on the respective branches, to be passed on by them and the secretary notified of the result; if favorable, the secretary can then issue the certificate and have the president sign it and send it to the member or candidate.

(Signed) C. B. McKinnon.

11. *Georgia.*

Answer to Question 5. Personally, yes; and I presume the board would be so inclined.

Answer to Question 6. I presume so.

(Signed) E. R. Anthony.

12. *Hawaii.*

Our laws on this subject require examination of medical practitioners applying for license to practise medicine in this territory.

(Signed) Charles Wilcox.

13. *Idaho.*

We favor reciprocity and will help.

(Signed) R. L. Nourse.

14. *Illinois.*

Resolution adopted by the Illinois State Board of Health October 10, 1899.

Resolved, That applicants for a state certificate to practise medicine and surgery in the State of Illinois, who have been examined and licensed by other State Examining Boards maintaining standards not lower than those provided for in the Act to Regulate the Practice of Medicine in the State of Illinois, in force July 1, 1899, shall be granted certificates without further examination on payment of fees required by the Act, providing, that the applicant, who must be a graduate of a medical college in good standing with this Board, shall present with his license an affidavit from the President or Secretary of the State Examining Board showing that the requirements of the said examining board at the time of his examination were equal to those exacted by this Board under the present law, and providing further that the State Examining Board will grant licenses without examination to applicants holding certificates issued by the Illinois State Board of Health under the Act now in force.

Note: Under the provisions of the Act to Regulate the Practice of Medicine in the State of Illinois, in force July 1, 1899, an applicants for a certificate to practice medicine and surgery in the state must present evidence of being a graduate of a medical college in good standing, as may be determined by the Board, and must pass an examination in those general subjects and topics a knowledge of which is commonly and generally required of candidates for the degree of doctor of medicine by reputable medical colleges in the United States. No medical college will be considered in good standing after January 1, 1900, which does not require of all graduates receiving diplomas after that date, as a condition of graduation, an attendance upon four full courses of lectures in four separate years.

15. *Indiana.*

So far we have been unable to establish reciprocal relations with any State Boards.

(Signed) Wm. T. Curryer.

16. *Indian Territory.*

(Creek Nation.)

Answer as to reciprocity favorable.

In reference to medical practice in the Indian Territory, will say in reply that in the Cherokee and Creek Nations a regular diploma can be registered, for which a fee of five dollars is charged; otherwise a charge of twenty-five dollars is made for examination.

The Seminoles employ a reputable physician on a salary of $1,250 per year, with the privilege of doing outside practice.

The Choctaws and Chickasaws require examination in all cases—for which twenty-five dollars is charged—which, in my opinion, should obtain anywhere.

(Signed) Geo. W. West.

17. *Iowa.*

Answer to reciprocity favorable.

The statute itself, and not any rule of the Board, declares that applicants for certificates must be examined by the Board. There is no way to avoid this unless the law itself is changed. Our legislature has adjourned and will not assemble until 1902.

(Signed) J. F. Kennedy.

[To be continued.]

MEDICAL PROGRESS.

Absence of Vagina.—Carl Beck (*Annals of Surgery,* October, 1900) created a vagina which one year after operation was functionally useful. His patient had no vagina, no uterus and no appendages. The method pursued was a follows: Above the symphysis a transverse incision was made exactly as if a cystotomy were being done. A catheter was passed into the urethra and retained as a guide. Blunt dissection with two thumb forceps was done until the vulva was reached, when upon a long director the extravesical cellular tissue was divided near the ure-

thra. Two flaps were taken from the inner aspects of the thighs with their bases at the vulva. After liberal dissection of these, with their skin surfaces apposed to each other and their raw aspects corresponding with the canal already made as above, they were drawn upward until their apices could be secured above at the suprapubic wound. The usual tamponade made a good canal which aside from a little contraction was serviceable. The wounds along the thighs were closed on general principles.

Total Gastrectomy.—V. De Carvalho (*Lancet*, September 15, 1900) records the case of a Brazilian mulatto woman, aged forty-six years, whose emaciation had advanced so continuously that she weighed but sixty-eight pounds; she had always suffered more or less from gastric pains since her youth, with recurring attacks of gastralgia followed by vomiting (occasionally of blood), becoming more frequent and severe. On examination a tumor, the size of a turkey's egg, was found in the right epigastric region close to the costal margin, the tumor being movable and painless on deep pressure; a median excision extending from the ziphoid cartilage of the sternum to the umbilicus was made and the tumor exposed; owing to the adhesions of the stomach to adjacent viscera, gastroenterostomy which had been contemplated was deemed inadvisable; hence, gastrectomy was decided upon and performed in the usual way, great difficulty being experienced in enucleating the stomach and in approximating the duodenum to the esophagus. Although the patient's condition was poor during the operation, requiring stimulation, and the introduction of artificial serum intravenously, the patient came out from operation nicely; rectal feeding was continued for six or seven days; at the end of the ninth day the superficial wound had healed and the patient was able to take small portions of solid food, which were readily digested. This is the fourth successful operation thus far recorded, being the first one to be done successfully in Brazil.

A New Spinal Brace.—In Pott's disease of the spine in which a skin slough had formed over the hump, E. A. Tracy (*Pediatrics*, September 15, 1900) used a half-inch board splint extending from sacrum to neck, and having a hole 2½ x 3 inches to receive the hump. The splint was padded with cotton and felt pads were attached to lie on the lateral processes of the diseased vertebræ. This exerted pressure for correction of the deformity, while it permitted the slough to be dressed. When the skin had healed two pieces of wood plastic material were attached to the board and moulded upon the child's body, one so as to embrace the chest, the other the pelvic bones. The brace cannot be put on wrong, may be removed once a week and snugly reapplied, and the pressure-pads can be changed or reinforced at will. a tightly-fitting undershirt is worn beneath the splint.

"Reminiscences" and Minor Epilepsy.—Careful study of the slighter forms of epilepsy frequently tend to throw some light upon the way the normal mental processes are carried out. The immediate effects of an epileptic fit depend upon the intensity of the localization of the nervous discharge. H. C. Thomson (*Practitioner*, September, 1900) says that there are three conditions which may arise from the discharge: (1) There is an overactivity of the part in which the discharge occurs, and subjective sensations corresponding to the function of that part are revealed. (2) The overactivity is accompanied or immediately followed by a negative condition which may be the predominant feature of the attack, and is manifested by a momentary loss of consciousness. (3) When the higher centers are involved, their control over the lower centers may be lost and the lower centers may cause acts of which the higher centers never become conscious. This is illustrated by the many automatic acts performed. One of the most interesting memory defects often associated with epilepsy but also occurring in healthy people is the so-called "reminiscence." This is a strange evanescent feeling of familiarity with some place or event which occasionally crosses the mind although the place is being visited or the event happening for the first time. One explanation of this rather common phenomenon is based on the idea of a previous existence. Another supposes that the two hemispheres do not act synchronously. Some have supposed them to be connected with dreams of somewhat similar plans or events. The author believes them to be due to temporary negative conditions of consciousness, probably due to some slight nervous discharge. He supposes that the first impressions of the room, for instance, do not rise into consciousness due to the temporary negative condition, but a moment later the scene is revealed together with this faint recollection of a distant event. Their occurrence must be considered abnormal and due to a localized discharge of nervous energy. A sudden increase in the frequency or intensity of sensations should be viewed with suspicion and should lead to a careful inquiry for other symptoms of a developing epileptic state.

Thrombosis in Pelvis and Lower Extremities.—K. Lennander (*Lancet*, September 15, 1900) reports that since resorting to elevating the foot of the bed of patients immediately after operation that the occurrence of post-operative thrombosis has decreased materially, probably owing to the mechanical aid afforded by this position in returning the venous blood from the extremities. Usually the foot of the bed should be elevated from six to twelve inches. In cardiac lesions, it is advisable to elevate the foot of the bed from ten to nineteen inches, gradually lowering this elevation some days after operation. Cardiac tonics such as digitalis, strychnine, etc., should also be employed in these cases; it is also helpful to massage the legs of some patients after

operation as this favors return circulation, provided the patient has not already had a thrombus; in laparotomy cases this method of elevating the foot of the bed is also beneficial.

Fractured Patella.—W. B. Trimble (*Med. Rec.*, September 29, 1900) advocates the following treatment as being most likely to give permanent good results. The knee is put in a soap poultice twenty-four hours prior to operation; on the morning of the operation it is thoroughly scrubbed with water and green soap, then washed with a solution of bichloride of mercury, 1-2000; this is followed successively by turpentine, alcohol, ether and lastly bichloride again; the incision is made transversely between the fragments, opening the joint; all blood-clot is washed away by continuous irrigation (bichloride of mercury, 1-2000) and the ragged aponeurotic fringe is lifted from between the broken pieces. Each fragment in turn is drilled, beginning one-eighth to one-fourth of an inch behind its fractured edge, going directly through; silver wire is used, about the size of or possibly a little larger than the lead in an ordinary lead pencil, it being filed sharp on each end to facilitate insertion; the pieces are drawn together by main force, and the wire is twisted tightly, holding them in apposition; the ends are then cut, the wire being hammered down flat on the bone; the subcutaneous tissues are then sewed down over the bone with heavy catgut; a drainage-tube is inserted in the wound, coming out of the most dependent part of the outside of the joint, a small incision having been made on the end of a Tait forceps pushed down through the original wound; a small bunch of horsehair drains is then laid across the patella in the same line as the original incision, each end protruding about one inch; the skin is then stitched with silk; the wound is dressed on the third day and the horsehair drain removed and possibly the drainage-tube; however, the tube may be left in until the second dressing if desirable. After ten days the wound should be entirely healed, and at the end of the second week passive motion should be begun, the patella being daily pushed from side to side, each day more forcibly than the preceding; at the end of the third week, flexion should be started and continued daily by the surgeon, until six weeks have elapsed since the time of the operation; the patient then should be allowed to use his limb, keeping up active motion, but carefully, until ten weeks have elapsed since the time of the operation.

The Ileocecal Orifice in Constipation.—W. J. Mayo (*Annals of Surgery*, September, 1900) narrates the case of a woman, aged twenty-one, who gave a history of chronic constipation with attacks of right-sided abdominal tenderness, lasting for several days at a time. These attacks recurred so often that an operation for appendicitis was advised and done; the appendix was found practically normal, except for a few adhesions; it was noticed at the operation that the small bowel was quite full of material in spite of the previous energetic purgation. At the junction of the ileum and cecum the caliber of the gut was markedly reduced, having the appearance of being constricted as if tied with a string; convalescence was uneventful, but the constipation and pain persisted until four months later, when she was again operated on, the ileocecal coil being exposed. An incision, two and one half inches in length, was made at right angles to the ileocecal orifice, having its center at that point; the wound was sutured transversely after the manner of the Heineke-Mikulicz pyloroplasty, making a very considerable increase in the size of the aperture between the ileum and cecum; recovery followed with a disappearance of both the constipation and localized pain. This case is interesting as throwing some light on the function of the ileocecal valve, which consists of two semilunar folds of mucous membrane situated one superiorly and the other inferiorly, leaving a transverse slit between at the point of junction of the ileum and cecum; immediately at the base of the valves is a circular fold of muscle fibers, forming a constrictor muscle having much the appearance of the pylorus; the main function of this valve seems to be to prevent the too rapid emptying of the small bowel and to maintain some pressure against peristalsis until the process of small-bowel digestion is properly completed; hence, if the barrier to ready egress be excessive, partial retention of small-bowel contents results with small-bowel constipation and its resulting train of symptoms, due to fermentation and absorption.

Adhesions About the Stomach.—A. T. Cabot (*Annals of Surgery*, July, 1900) describes adhesions about the stomach and duodenum not associated with malignant disease or any still active inflammation of that region; these adhesions arise as a result of a variety of inflammatory conditions, *e. g.*, inflammation of the gall-bladder; ulcers of the stomach and duodenum and of the transverse colon extending to the peritoneal coat of the infected viscus, causing it to adhere to the surrounding parts; and inflammations in and about the pancreas, usually so severe as to be fatal. The adhesions may be thin and lax or tough, firm, and thick, their effect depending more upon their situation than upon their density; dense adhesions may give no symptoms if they do not lead to distortion of the organs; while light adhesions between the stomach-wall and the duodenum may produce a decided kink of the pylorus and so interfere with the permeability of this orifice; constricting bands may cause dilatation behind the point of obstruction; the organs usually bound together are the pyloric end of the stomach, the first part of the duodenum, the transverse colon, and the gall-bladder, with adjacent portions of the liver. The previous history of the patient often points to some earlier attack or attacks of biliary colic or of gastric or duodenal ulcer, which may have

occurred many years before and have been followed by a long period of comfort; usually, however, digestive disturbances and pain are the prominent symptoms; the former usually appear as attacks of violent indigestion either continued or with intervals of comfort; the pain is usually a marked feature; it may be moderate in degree or excessive, in which case it is spasmodic and lancinating, not unlike that of biliary colic. When the severe pain occurs as a distinct attack, it usually lasts but a relatively short time, rarely more than a few days, and usually is of a distinctly intermittent character; the pain is usually referred to the epigastrium and the right hypochondrium; in one case the pain which began in the epigastrium extended along the costal border of the right side until it encircled the body, vomiting and inability to take food being present during this time. The diagnosis of adhesions is not easy, but a long-enduring liability to attacks of gastralgia, for which a careful study of the gastric functions fails to suggest an adequate explanation should lead one to expect adhesions; also attacks simulating biliary colic without jaundice justify a like suspicion; in either case an exploratory operation is not only justifiable but is called for, the operation being easily done and not fraught with danger.

New Test for Typhoid in Feces.—That the Eberth bacillus is always present in the stools of those affected with typhoid fever and absent in other conditions is a proposition the truth of which can be demonstrated, in the opinion of L. Rémy (*Public Health Reports,* September 21, 1900), by the employment of a proper culture medium. The contradictory and inconclusive results obtained by previous investigators he ascribes to the unsatisfactory character of the gelatin used, even the potato gelatin of Elsner, the most successful medium, being unreliable on account of its variable chemical composition. To overcome these objections, the author prepared a differential gelatin, closely resembling the potato in chemical composition. The constituents are as follows: Distilled water, 1000 grams; asparagine, 6 grams; oxalic acid, 0.5 gram; lactic acid, 0.15 gram; citric acid, 0.15 gram; disodic phosphate, 5 grams; magnesium sulphate, 2.5 grams; potassium sulphate, 1.25 grams; sodium chloride, 2. With the exception of the magnesium sulphate, the above salts are powdered, mixed with the water and 30 grams of Witte's or Grubler's peptone and heated under pressure for a quarter hour. The solution is then added to 120 to 150 grams of gelatin, shaken and made slightly alkaline with soda solution. After a second heating similar to the first, one-half normal solution of H_2SO_4 is added until 10 cc. of the solution are neutralized by 0.2 cc. of one-half normal soda solution. The solution is then shaken, placed in a steam sterilizer for ten minutes and filtered, after which the acidity is verified. The magnesium sulphate is now added and the solution is placed in tubes containing 10 cc. each and is sterilized three times. Just before using, 1 cc. of a 35-per-cent. solution of lactose and 0.1 cc. of a 2.5-per-cent. solution of carbolic acid are added to each tube. By means of this differential gelatin, 31 observations were made of the stools of 23 typhoid-fever patients. In three instances only were the results negative, and in each of these three cases other observations were positive. In no case, therefore, was there failure to find the Eberth bacillus. On the other hand, it was absent from the stools in every one of 12 cases of various other diseases. As a result of his investigations the author believes himself justified in claiming that his differential gelatin is a practical and certain medium for the isolation of the typhoid bacillus in the presence of the colon bacillus, by the plate method. Further, that the Eberth bacillus is the pathogenic element in typhoid fever and that its presence in the stools is the only sign which is competent of itself to establish the diagnosis of the disease.

Antiplague Serum.—H. D. Geddings (*Public Health Reports*) believes that both the Haffkine prophylactic and the Yersin antiplague serum have demonstrated their great superiority to all other known measures for the prevention and cure of bubonic plague. For the latter purpose, the Yersin serum only is available, as the prophylactic, being itself a product of the plague bacilli, is distinctly detrimental to a person already infected with the disease. As preventives both remedies are effective, but the differences between them are so marked and numerous that there is seldom any question in given circumstances as to which should be preferably employed. Where actual infection is probable, as in the cases of those in the immediate vicinity of a plague patient, the Yersin preparation is indicated, as its action is prompt and directly antagonistic to the malady. On the other hand, its immunizing effect is so temporary, about two weeks, and its production is so expensive that it is not eligible for the protection of those not already exposed, especially if in large numbers, as when an entire community is threatened by an advancing epidemic. In such circumstances recourse should be had to the Haffkine prophylactic which can be produced rapidly in large quantities and at small cost. Its inoculation is followed in a few hours by a local and constitutional reaction which, though generally mild, may be fairly severe, in which respect it contrasts unfavorably with the Yersin serum. The latter possesses the additional advantage, when properly prepared, of keeping almost indefinitely, whereas the former deteriorates under the influence of air and light and cannot be depended on for a longer period than six months. Although the immunity conferred by the Haffkine prophylactic usually persists for several months, it is not absolute, as is demonstrated by the not infrequent development of the plague in vaccinated persons, but the death-rate is low in such circumstances. Experience has shown the advi-

sability of a second inoculation about ten days after the first. The Yersin serum is a true antitoxin, produced by subjecting a horse to successively stronger injections of plague toxin, the process requiring the greater part of a year. Occasionally its completion necessitates the inoculation of the animal with a live culture of the bacillus. The Haffkine prophylactic, on the contrary, is a toxin prepared by growing cultures of the bacillus for a month and then destroying the organisms by subjecting them to a temperature of 70° C. for two hours. As illustrative of the utility of both first and second vaccinations with the prophylactic, the author quotes the following statistics of observations made in Shanvar, India: *Inoculated once,* 5712, attacks, 69, deaths, 31; *inoculated twice,* 3349, attacks, 9, deaths, 5; *not inoculated,* 5614, attacks, 957, deaths, 756.

Malignant Diphtheria.—That an attenuated diphtheria germ may, in new soil, cause the most virulent form of the disease is well shown by Dr. Coriveaud (*Journal de Médecine,* September 9, 1900). In an epidemic of mild cases one child had recovered and was dismissed from the hospital as cured, but had still a slight discharge from a suppurating submaxillary gland. A few days later, in a neighboring town, it slept with another child, and nine days afterward this latter developed an extreme diphtheria poisoning and died. Six days later a brother was attacked, followed in eight and eleven days by two other children. All exhibited marked asphyxia, not due to the membrane but to the excessive toxemia; all were given antitoxin, but each succumbed within two days of the attack.

Xanthoma Diabeticorum.—A case of this relatively infrequent disease of the skin is reported by Samuel Sherwell and James C. Johnston (*Jour. Cutaneous and Genito-Urinary Dis.,* September, 1900). The patient was an American woman, forty years of age, and somewhat plethoric and stocky in build. She had always been in fairly good health; was married and had had four children and four or five miscarriages. These apparently had no effect upon the skin lesions. The first lesions were noticed about five or six years previously, first on the arms, elbows, the knees and the nates. They have been relatively less marked during the summer months, but have been fairly constant. They have gradually increased in extent and intensity each year. During the last year the symptoms have become so very distressing that she could get no relief night or day. There was great pain on using her hands, on standing or walking, and on sitting or lying down. Sleep was almost impossible. The tubercular masses in the skin felt and caused a sensation as if peas or shot were in her skin when she laid herself down. If one looked at the patient standing nude a little distance from the observer, the eruption might have been taken for a case of variola at the height of the pustular and confluent stage of that disease. There were narrow, dark-red inflammatory halos around all the tuberculate and conglomerate masses, some of which rose as much as a quarter of an inch above the level of the skin. The tops of the elevations were rather conical in shape, of a bright yellow (xanthomatous) character, and were hard and resistant to the touch. These lesions were most numerous on the extensor surfaces of the arms and legs, and on the back and nates. No part of the body was free from the lesions, except the eyelids. On examination of the patient's urine it was found to be normal in reaction, sp. gr., 1021, slightly albuminous, and to contain an enormous quantity of sugar. From the history of the amount of water she passed, her thirst, etc., it is probable that the glycosuria had existed since the skin lesions appeared. On antidiabetic diet and mild laxative alkaline treatment she improved considerably. The glycosuria has not disappeared, but is now comparatively slight. Sherwell believes that this disease is not a true xanthoma, but an inflammatory condition resembling that affection, occurring in diabetics. Johnston describes at some length the histology of the disease. Two illustrations of the case accompany the paper.

Tuberculous Lymphadenitis and Pseudoleukemia.—The idea that Hodgkin's disease is of infectious origin is by no means a new one. Many bacteria have been isolated from the glands of such cases, but recently careful investigations have proven the tuberculous nature of severe cases agreeing clinically with those of pseudoleukemia, and showing after death lesions pointing to the latter condition. F. R. Crowder (*N. Y. Med. Jour.,* September 15 and 22, 1900) reports in detail a case which appeared clinically to be one of pseudoleukemia and describes fully the lesions which were afterward found in the various organs, proving how difficult it is even with the aid of the microscope to distinguish between a tuberculous and non-tuberculous glandular hyperplasia. The tissue is not at all characteristic of tuberculosis and when the germs are few they may be difficult to demonstrate. The inoculation experiments are frequently necessary. In the author's case the diagnosis of pseudoleukemia had been made, but microscopical examination showed the tuberculous nature of the condition. Two inoculation experiments proved negative in this instance. There was no new or old tuberculous lesion of the lungs, but there were tubercles in the liver, spleen, kidneys and peritoneum, and further investigation showed that the other lymphatic and visceral lesions which pointed plainly to pseudoleukemia were really tuberculous in origin. The literature upon the subject is reviewed and a large number of cases which appeared to be examples of Hodgkin's disease have been found by bacteriological experiments to be due to the tubercle bacilli, although the clinical symptoms and the anatomical lesions were characteristic of pseudoleukemia. It is not fair to say that all

pseudoleukemias are even probably tuberculous in origin, but it has been abundantly proven that tuberculous lymphadenitis may give rise to all the symptoms and anatomical findings of that disease and undoubtedly more complete analyses in the future will demonstrate this specific cause in a large number of so-called pseudoleukemic cases.

Acute Leukemia.—Being among the rarest of blood-diseases, the acute form of leukemia is not as a rule described in the usual text-books. A. Dennig (*Münch. med. Woch.*, Sept. 18, 1900) finds that it may occur at any age, though most often in adult males, and that it comes on suddenly in those previously in the best of health. Extreme malaise and weakness force the patient to go to bed; soon headache, pains in the limbs and often difficulty in deglutition are added. Stabbing pains in the splenic region, palpitation of the heart, vertigo and syncope may develop. Furthermore an increasing pallor of the skin, fever and hemorrhages from the skin, mucous membranes or into the organs, appear early. The gums are often swollen and bleeding and scurvy may be suspected. In the subsequent course of the disease the spleen usually swells, but rarely to the degree of chronic leukemia, and the same may be said of the liver and the lymph-nodes. Bronchitis or bronchopneumonia, hemic murmurs, increased frequency, smallness and irregularities of the pulse and tenderness of the bones are often noted. Of great diagnostic importance is the examination of the blood. There usually is a considerable increase in the mononuclear elements varying from the size of a red cell to twice as large and possessed of a large, round, faintly-staining nucleus surrounded by a narrow zone of protoplasm which is not granular and which possesses no special affinities for neutral or basic dyes. The red cells show the changes of a severe anemia. The appearance of the blood is not, however, absolutely diagnostic since a similar picture may be found in chronic lymphatic leukemia. Too few cases have been observed to prove the asserted micro-organismal character of the disease. The prognosis is unfavorable, since no known remedies stay its progress.

Diagnosis of Gout.—The frequency of gout and the ease with which it may be overlooked is dwelt upon by A. Strumpell (*Münch. med. Woch.*, Sept. 18, 1900). Although many different joints may be involved, these most frequently belong to the lower extremities and are most distally situated from the trunk and the first metatarsophalangeal articulation is rarely spared. Another important diagnostic feature is the usual monarticular character of gout; at all events it is very rare to have more than two or three joints affected at the same time. The short duration and the great frequency of the attacks are peculiar, as is also the appearance of intense swelling which a gouty joint gives. Not very rarely chronic gout is mistaken for arthritis deformans, but the history of previous acute attacks and the presence of tophi and perhaps of a sclerotic kidney will prevent this error. Often errors arise in that advanced gout manifests itself by symptoms not emanating from the joints, as tarsalgia, achillodynia, or more seriously as chronic nephritis or arteriosclerosis. An interesting fact is that two other diseases of nutrition, diabetes and obesity, not rarely occur conjointly with gout, so that the metabolism of all three great classes of foods may be disturbed together. Disturbance of proteid metabolism, causing gout; of carbo-hydrate reduction, diabetes and of fatty obesity. The etiology factors chronic alcoholism and lead intoxication may aid in doubtful cases in making a diagnosis.

Action of Chrysarobin.—From a microscopical study of the skin treated with chrysarobin plaster, M. Hodara (*Monatshft. f. prakt. Dermatolog.*, Sept. 15, 1900) finds that this causes a homogenization and necrosis of the granular and part of the prickle-cells of the epidermis with pigmentation of the lower cornified strata. If used in greater strength there will be edema and severe inflammation of the cutis and intra- and intercellular edema of the prickle-cells of the epidermis with the formation of seropurulent vesicles. Below the necrotic layers a new and more extreme layer of prickle- and granule-cells will develop.

Anilin Blue in Malaria.—Since its introduction by Laveran in 1891, methylen blue has been used with varying success not only in the treatment of malaria, but also in other diseases, such as persistent headache, neuralgia, rheumatism and as a sedative in insanity. Contrary to the earlier view, however, it has been found that in spite of the affinity of the malarial parasite for this substance staining of the hematozoon does not take place in the circulating blood and some other theory must be advanced regarding its action. In order to determine whether this was due to the chemical constitution of the agent, Alexander Iwanoff (*Deutsch. med. Woch.*, Sept. 27, 1900) experimented with another dyestuff, choosing anilin blue which differs from methylen blue in composition and also in belonging to the acid not the basic group of stains. Fifteen carefully selected cases were treated with anilin blue alone, receiving 5 grains three times a day, with the result that in 7 the malady promptly terminated by lysis and the organism disappeared from the blood. No unpleasant by-effects were noted; in particular, the distressing vesical and urethral irritation so often accompanying the use of methylen blue was entirely absent, while the percentage of cures is about the same for the two drugs. The conclusion reached is that the action of methylen blue is independent of its chemical formula, other stains having the same effect, and that in the anilin products there still remains a vast amount of unexploited therapeutic material.

THERAPEUTIC HINTS.

Baldness.—About once in two weeks the scalp should be thoroughly cleansed with tincture of green soap as a shampoo, and the following well rubbed in once a day:

℞ Resorcin ..... 4.0 (℥i)
Ac. salicyl..... 1.0 (gr. xv)
Ol. ricini..... 0.5 (gtt.viij)
Alcohol .....30.0 (℥i)

After two or three weeks this latter may be replaced by

℞ Hydrarg. chlor. corros.. 0.5 (gr. viij)
Betanaphtol ..... 3.0 (gr. xlv)
Ol. ricini..... 1.0 (♏ xv)
Alcohol .....90.0 (℥iij)

Albuminuria of Pregnancy.—James W. McLane orders rest in bed, plenty of fresh air, skimmed-milk diet, with no alcoholic liquors, half a gallon of water (not mineral water) a day to flush out the kidneys, a daily warm bath, and when needed the following pill:

℞ Ext. Colocynth. Comp. 0.1 (gr. ij)
Mass. Hydrarg..... 0.09 (gr. iss)
Ext. Nucis. Vom..... 0.01 (gr. 1/7)
Pulv. Aloes..... 0.03 (gr. ½)

For an acute case he advises venesection, if plethoric, or dry or wet cupping over the loins, with free catharsis by compound jalap powder, or calomel, gr. x, and sod. bicarb., gr. xx. If there is no relaxation of the symptoms, induce labor as soon as the child is viable.

Ichthyol in Trachoma.—M. Eberson (*Therap. Monatsh.*, Vol. XIV., p. 313) gives the clinical histories of five cases of trachoma, illustrating the good results afforded by ichthyol in this otherwise intractable disease. He differentiates two forms of the disease, a dry or mild and a moist or severe. The former is best treated with copper sulphate, but the latter requires more energetic measures. The method followed by the author is first to wash the everted lids with a solution of corrosive sublimate, 1-5000, to remove pus, mucus, etc., and to cause a slight mechanical hyperemia. The friction must not be too severe, otherwise the conjunctiva is made to bleed. A few drops of pure ichthyol are applied with the rounded end of a glass rod and spread out in a rather thick layer. This is allowed to remain a few seconds, or until the patient feels the burning pain no longer, when it is then washed away with clean water by means of cotton. It is sometimes advantageous to employ a fifty-per-cent. ichthyol solution for the first few applications, and then to proceed to undiluted applications. This treatment relieves the severe, annoying symptoms accompanying trachoma, without incurring noteworthy pain, and without giving rise to cicatrices. At the same time, it almost entirely removes all danger of infection.

Urticaria.

℞ Pul. Calaminæ ..... 8.0 (℥ii)
Aq. Calcis .....250.0 (℥viii)
Acidi Carbolici ..... 2.0 (℥ss)
M. Use as a lotion.

If not sufficient to allay irritation, and burning is extreme:

℞ Menthol ..... 0.6 (gr. x)
Adipis .....30.0 (℥i)

Typhoid Fever.—A. Schmidt (*Montreal Med. Jour.*, Aug., 1900) calls attention to the value of the almost forgotten "Woodbridge treatment." Three different formulæ are used, as follows:

No. 1. Res. podoph. 0.00006 (gr. 1/960)
Calomel ....
Guaiacol carb.
Menthol ... aa. 0.004 (gr. 1/16)

No. 2 is the same except that guaiacol is increased to 0.015 (¼ grain), and thymol, 0.004 (1/16) grain), is added.

No. 3. Guaiacol carb..... 0.18 (gr. iij)
Thymol ..... 0.06 (gr. i)
Menthol ..... 0.03 (gr. ss)
Eucalyptol ..... 0.3 (♏ v)

In capsule.

During the first forty-eight hours give No. 1 every fifteen minutes while awake. After twenty-four hours give also No. 2 every fifteen minutes until five or six free evacuations of the bowels are secured. Then No. 1 is discontinued and No. 2 given less frequently, so as to keep the bowels moving once or twice a day until the temperature is normal. On the third or fourth day No. 3 is given, one every three of four hours. About the fifth day No. 2 is discontinued, and teaspoonful doses of saturated solution of chlorate of potassium are administered every three hours. After one or two days this is stopped and No. 2 again exhibited as freely as possible without causing too frequent evacuations of the bowels. Should the slightest symptom of ptyalism supervene, No. 2 must be discontinued and the chlorate of potash resumed. During the entire treatment every dose of medicine must be washed down by water.

Fireman's Colic.—Firemen on board ship are subject, writes Willis Cummings (*Merck's Archives*, Aug., 1900) to a "colic," with acute pain, extreme prostration, bloodshot eye, much thirst, labored breathing, irregular heart, and agonized expression, a condition which does not yield to *Sun* Cholera Mixture or other cramp remedies. As these men drink large quantities of water, he has been able to prevent this colic by adding to each gallon of water

Calcium phosphate
Sodium phosphate
Potassium phosphate..aa. 17.0 (256 grs.)

with a little oatmeal and ice. A man drinks approximately this amount in four hours while "firing." It was noticeable that the men taking this mixture had much less craving than usual for alcoholic drinks.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, OCTOBER 27, 1900.

NEW YORK'S PLAGUE.

If one of our yellow journals should blurt out in ten-inch headlines, "Eight thousand dead of the Plague in New York City, Thirty thousand more likely to die," it is probable that the city would be aroused to the point of panic, and that prayers and dollars would be poured out wildly to check the spread of the disease. And yet because a plague which during 1900 carries off 8000 of New York's citizens is consumption, a respectable family disease, instead of the loathsome rat and flea bubonic plague, it will take oratory, wire-pulling, persuasion, threatenings and sentimentality to present to the many-minded public any conception of that duty which their own common sense should point out to them, *viz.*, the provision of municipal treatment for the disease, to cure incipient cases and to check the spread of infection.

For forty-five years, ever since Peter Cooper headed the first movement in this direction, there has been a desire on the part of enlightened citizens and physicians to bring about such a reform, but for lack of municipal encouragement it has found expression only in private charities. In the meantime between one and two hundred thousand of the inhabitants have been cut off before their time by this, the city's scourge.

It is an easy thing to bandy words on the subject of reform. The optimist would have tuberculosis become an extinct disease, and all its saved victims centenarians; the pessimist sees in it one of the natural means of wiping out the surplus, for the benefit of the survivors. The man of common sense, and especially the physician, knows that it is a death more cruel to the laboring poor than the sudden terrorizing plague, and a death that though inevitable to some can be prevented for most with proper treatment. He sees in it a cause of desperate poverty, and of wide contagion, for the streets, the air, the public conveyances are full of it; and there is no rattling of bones, or hollow cry, as of the leper, to warn the passer-by to beware.

Perchance there was the same lethargy in the fabled city, when the hundred young men and maidens were led out each year to the Minotaur. Impossible to kill him! All must die! and what an expense to the commonwealth to force a war on the monster! And so the annual 8000 deaths of our city cause us no particular alarm, though every man, woman and child that walks the streets knows vaguely that it may be his turn next.

For a practical straight-forward discussion of the subject we commend to our readers the article by Dr. Alfred Meyer, "The City and Its Consumptive Poor," in this issue, in which he brings the subject down to the level of dollars and cents, and puts the matter in a strong, plain light; so that the physician, the politician, the tax-payer and the philanthropist can all see the subject in its practical aspects. We would also refer them to the discussion held at the New York Academy of Medicine (see p. 671) of this issue.

It is not the policy of New York City to recognize a need and then beg off on the ground of expense or expediency. The discovery of the infectious nature of tuberculosis adds the unanswerable argument to all the philanthropic and economic arguments of the last half century. To dally with the question another fifty years, even for another decade, is to play the part of the improvident householder who buys rare pictures and rugs, and engages expensive teachers for his children, but neglects his plumbing.

Our city parks, and well ventilated schools, our museums and libraries, are all essential to the city's prosperity, but down at the very basis of our municipal being is the need to observe the laws of health.

THE PROBLEMS OF GASTRIC ULCER.

The closer analysis of conditions affecting the gastrointestinal canal is yearly becoming more prominent. In this age in which the frying-pan is characterized as the great enemy of civilization, the general practitioner welcomes any addition that can increase his diagnostic acumen or his facilities for treatment of dyspeptic ills. For this reason a recent paper by Dr. Joseph Frank Payne (*British Medical Journal*, September 29, 1900) is of interest.

From a study of the statistics of St. Thomas' Hospital, London, he is led to believe that there is an actual increase in the number of patients suffering from gastric ulcer. From 1870 to 1895 the numbers have gone from 30 to 216. That this increase is not the result of better diagnostic methods is evidenced by the fact that the fatal cases have increased in about the same proportion and certainly these have been recognized postmortem. He therefore propounds the question, Is the disease more common than formerly and does it affect people of a social grade higher than the typical servant class in which it is so commonly described?

The question of diagnosis has not varied much for many years. The cardinal symptoms are still pain in the stomach at certain times, referred to definite locations; gastric irritability with vomiting of food and hemorrhage, evidenced in the vomit or stools. One new diagnostic feature alone has been added within the past thirty-five years, that of hyperacidity of the gastric fluid, due to excess of hydrochloric acid. The impression gained is that hematemesis associated with other gastric symptoms is one of the most trustworthy of all the signs. It is not positively diagnostic however.

The prognosis is good but a striking contrast in this respect is to be noted between men and women. In males 22 per cent. of his patients died, while among the females but 6 per cent. succumbed. Recurrences are quite prone to happen.

On the important subject of treatment Dr. Payne has a number of suggestions. Rest is an essential. The withholding of all food from the stomach is imperative and rectal feeding is clearly indicated. Notwithstanding theoretical objections relative to the non-absorbability of the colon mucous membrane, the use of peptonized food is of value. Plain milk or unmodified egg preparations are not used by Dr. Payne. The usual denial of water to quench thirst with the substitution of small lumps of ice is held to be unnecessary. Water may be given in moderation. It is moreover a distinct adjunct to the intestinal feeding in the maintenance of the patient. One week of rectal alimentation without water is badly borne, but with water patients bear up well for weeks or even longer periods. The main danger in rectal feeding is not emaciation but heart collapse, and during the second week of such feeding great care is to be observed.

The occurrence of acetonuria accompanying colon alimentation is interesting and suggests the query of its origin. Is it a product of the gastric ulcer or is it due to the type of feeding, or the extreme restriction of the diet? Of drugs, the bismuth preparations and nitrate of silver have promised most. Their action is entirely local, and their suitability appears to depend on the fact that they are not absorbed, or very slowly, and therefore do not produce vomiting or general toxic effect. The question of the treatment of perforation is purely surgical.

THE BACTERIOLOGY AND THE SERUM-TREATMENT OF WHOOPING-COUGH.

The marked infectiousness of whooping-cough determines that disease so clearly to be of bacterial origin that it must be considered a little disappointing that the actual causative factor has not yet been isolated and the way for the production of a protective and curative antitoxin opened.

Even before the science of bacteriology had attained its present development, efforts were made to discover the existing agent of pertussis, but the first important contribution in this connection was made in 1887 by Afanassiew, who described a minute rod in the expectorated matters from children suffering from the disease, and which, when injected into the trachea of young dogs, excited paroxysms of whooping-cough. These observations were subsequently confirmed by a number of investigations. Meanwhile, however, Ritter, in 1892, described a diplococcus as the etiologic agent; and, then, Czaplewski and Hensel, in 1897, isolated a small bipolar rod resembling the influenza-bacillus; although inoculation-experiments were not in either case successful. These latter observations also have been confirmed, among others by Joseph Walsh and G. Arnheim (*Contributions from the William Pepper Laboratory of Clinical Medicine*, Philadelphia, 1900, p. 450; *Berliner klinische Wochen-*

schrift, 1900, No. 32, p. 702), the former, in a series of twelve cases with one autopsy, finding the Czaplewski-Hensel bacillus in the expectorated matter in eight of the nine cases examined and in the tissues after death, and the latter obtaining similar results in forty-four cases, including three autopsies. Examination of the sputum from a child at the height of an attack of whooping-cough, spread upon a cover-slip and exposed to the action of dilute carbol-fuchsin, will reveal with powers of sufficient magnification a large number of small bacilli, sometimes arranged in short chains, stained at the extremities, generally without, but sometimes within, the cells. The organisms can be stained also by the methods of Gram, Weigert and Escherich. They can be cultivated from the washed sputum by inoculation upon blood-serum plates.

The weight of evidence would thus seem to indicate that the Czaplewski-Hensel bacillus is the actual cause of whooping-cough, in spite of the failure to induce the disease in animals by experimental inoculation. Walsh has, however, gone a step further in this direction, having been led by the unanimity with which is emphasized the immunity conferred by one attack of whooping-cough to subsequent attacks, to undertake serum-treatment; and the subcutaneous injection of blood-serum from individuals who had previously recovered from the disease was followed by distinct amelioration in the symptoms. The experiences recorded are insufficient for definite conclusions, but they at least justify further observation along similar lines.

ECHOES AND NEWS.

NEW YORK.

Craig Colony for Epileptics.—This admirable institution is now caring for 615 epileptics and hopes to take care of 720 by January, 1901, and 840 by July 1, 1901.

Woman Physician Sues.—Dr. Anna L. White obtained judgment for $467 against a noted playwright in one of the city courts. The playwright guaranteed the bill for services rendered to a friend.

Railway Surgeons.—The annual meeting of the New York State Association of Railway Surgeons will be held at the Academy of Medicine, New York City, on Thursday, November 15, 1900, under the presidency of Dr. J. L. Eddy of Olean. C. B. Herrick, secretary.

Silver Medal to Dr. Baruch.—At the recent convention of jurors of the World's Fair in Paris, Dr. S. Baruch of this city was awarded a silver medal in recognition of his signal services in bringing about the establishment of free public baths.

Obituary.—Dr. Henry Moreton of 187 Grand Street died in his drug-store at 233 Centre Street October 20, 1900. He was ninety-three years old. He came to this country from England in 1828 with his brother, also a physician.

Dr. John W. Robinson, one of the oldest Wayne County practitioners and prominent in Republican and Masonic circles, fell dead October 20, 1900, of heart disease at his home in South Lyons. He had been County Physician since 1890. He was graduated at the College of Physicians and Surgeons in New York City in the class of 1867.

Dr. Lewis A. Sayre.—At a recent meeting of the Faculty of the University and Bellevue Hospital Medical College the following minute was entered on the records: "The members of the Faculty realize with deep regret their great loss in the death of their late colleague, Professor Lewis A. Sayre, M.D. His long and honorable professional career has shed luster on the calling of his choice and on the medical school to which, at its birth, he plighted his earnest support, and which he sustained with loyal vigor until his death. While bowing in humble submission to the will of Him 'who doeth all things well,' we extend to the members of his family our earnest assurance of sympathy in this their great affliction."

St. Luke's Hospital.—The annual meeting of the Society of St. Luke's Hospital was held last week. The following were elected managers of the hospital: Samuel D. Babcock, George Blagden, Waldron P. Brown, George A. Crocker, Chauncey M. Depew, Theodore K. Gibbs, Anson W. Hard, Woodbury G. Langdon, Benoni Lockwood, George M. Miller, Hoffman Miller, J. Pierpont Morgan, Jr., the Rev. Dr. Henry Mottet, Gordon Norrie, J. Van Vechten Olcott, John B. Pine, Moses Taylor Pyne, Charles Howland Russell, William Alexander Smith, J. Noble Stearns, Stephen Baker, William Fahnestock, and George W. Vanderbilt.

Typhoid in Training School.—Six of the inmates of the Boys' Disciplinary Training School, Eighteenth Avenue and Fifty-sixth Street, Brooklyn, are suffering from typhoid fever. Dr. Frederick A. Jewett, Chief Inspector of Contagious Diseases, was notified of the epidemic and took the necessary precautions to prevent the spread of the disease. The first boy was stricken on Tuesday last, but before the disease had fully developed the other boys became ill. At the school it was said that there was no likelihood of the disease spreading.

PHILADELPHIA.

Dr. Richardson.—Dr. Maurice H. Richardson of Boston was the guest of the Medical Club of Philadelphia Friday evening, October 26th.

Congress of Mothers.—The first annual meeting of the Pennsylvania Congress of Mothers will be held at Lancaster, November 2d and 3d.

University of Pennsylvania.—A vacancy in the medical department is that of Clinical Professor of Genito-Urinary Diseases. This is owing to the fact that Dr. Edward Martin has been elected Clinical Professor of Surgery. Candidates may apply to Rev. J. Y. Burk, 400 Chestnut Street, before November 10th.

Obituary.—Dr. Laurence Turnbull died at his home in this city Wednesday, October 24th. He was born September 10, 1821, in Shotts, Lanarkshire, Scotland, and came to the United States when twelve years of age. He was graduated from Jefferson Medical College in 1845 and soon after became resident physician at the Philadelphia Hospital. In 1859 he visited Europe and made a special study of diseases of the eye and ear. Returning to this country, he published a work on the "Use of the Ophthalmoscope," the first in America. His numerous studies on diseases of the eye and ear are known the world over.

Epidemic of Diphtheria.—Diphtheria has reached Camden and a number of cases are reported. A former coroner states that the disease is of the most malignant type.

A Hygienic School.—At the Holman School for Girls, a college preparatory institution, the individual drinking cup for each pupil, as well as germ-free water, is in use. Systematic muscular exercise is considered a necessary concomitant of study.

Philadelphia Hospital.—The Bureau of Charities has appropriated $130,000 for the erection of new buildings at the Almshouse. The insane department will be enlarged and a building erected for the treatment of infectious diseases.

Statue Purchased.—The Fairmount Park Art Association has purchased the equestrian statue, "The Medicine Man," by Dallin, for $6000. The statue represents a true type of the American Indian doctor and will be an interesting addition to the statuary of the Park.

Druggists Prosecuted.—The State Pharmaceutical Examining Board is waging determined war against violators of the statutes. Over 200 informations have been made in Pittsburg. Detectives report that State laws have been disregarded in so many instances as to leave only a small percentage of the druggists in the State blameless.

Anesthesia Accompanying Bell's Palsy.—At the Neurological Society, October 22d, Dr. J. Hendrie Lloyd exhibited a patient, a young woman, who had Bell's palsy of the right side. Accompanying this was complete anesthesia of the region supplied by the fifth nerve of the same side. The anesthesia was thought to be hysterical in origin rather than an extension of the pathological condition from the seventh nerve.

Smallpox.—Three new cases of smallpox were reported last week. Each case was in a different ward. The disease was well developed, but of a mild type. An unusual point is that all three cases are whites, every other patient in the city since last spring having been a colored person.

Application for Hospital Charter.—The Ogontz Hospital for the Insane has applied for a charter. This institution is intended to relieve the overcrowded condition of the Norristown Hospital.

Quarantine Improvement.—The State Quarantine Board has planned several improvements at the station at Marcus Hook. A detention barracks to accommodate 400 patients will be built, a tug for boarding vessels will be provided, and also a floating disinfecting plant.

Dr. Thomas Addis Emmet.—This distinguished gynecologist operated in the clinic of Prof. E. E. Montgomery at the Jefferson Hospital October 23d. He demonstrated his operation for repairing a complete laceration of the perineum and gave a practical talk upon laceration and its prevention during labor. In repairing lacerations Dr. Emmet prefers silver wire sutures, as they act as splints to the parts involved.

New Litters for National Guard.—The officers of each medical corps of the First Brigade, N. G. P., have been presented with two litters, the invention of Mrs. F. E. Chadwick, wife of Captain Chadwick, U. S. N. These carriers are peculiarly adapted for service on the battlefield, presenting the form of a hammock-chair. It is thought that the carrier can also be suspended between two horses and thus be utilized by mounted men.

Pure Milk for Infant Feeding.—The Commission appointed by the Pediatric Society in 1899 has recently made an interesting report. The Commission issues certificates to dairymen after examination of the milk, utensils, cows, etc., has been made by an expert and found to reach a certain standard. Two dairies have obtained this certificate. Others are being improved in order to reach the standard. This method appears to appeal to the business instincts of the dairymen and to be productive of more good than the endeavor to enforce laws. The report emphasizes the appeal made by Dr. Stengel, a member of the commission, at the meeting of the State Medical Society. That appeal was for the appointment of similar commissions by all local medical societies.

State Examinations Again Prominent.—The daily paper which was prominent in investigating the fraudulent examination of 1899 has come out

with a statement regarding the examination of last June. The claim is made that nearly 10 per cent. of the candidates who were granted licenses at that time failed to attain the necessary average. When the members of the Board met and found that the marks on the individual papers did not reach the required total, some of them were raised or the general average was raised. This was done because the political or personal "pull" of these certain candidates demanded that they pass. The allegations of the paper are presumably true, as it is known that candidates for license have been told by political friends that if they are doubtful of the result they will see that the candidates pass. This is another argument in favor of practical examinations instead of, or in conjunction with, the written ones.

CHICAGO.

Quarterly Medical Examination.—The regular quarterly medical examination by the State Board of Health closed October 11th. Forty-one persons took the examination, 27 of whom were candidates for physicians' certificates, 8 for certificates of midwife, and 6 were classed under the head of "other practitioners."

The Fenger Banquet.—It is said that more than 130 medical societies have thus far appointed representatives to attend this banquet. The President of the American Medical Association, Dr. Charles A. L. Reed of Cincinnati, Ohio, will act as toastmaster.

Free Care for Epileptics.—The Illinois Home for the Treatment and Care of Epileptic Patients is the only institution in the State where the treatment of these unfortunates is free. The object of the home is the establishing of an epileptic colony and the erection of a building for this large class of patients, with farms, workshops, a theater, reading-room, gymnasium, and equipment for restoring the mental faculties of curable epileptics, and to give a miniature world to incurable epileptics. Incarceration of epileptics in insane asylums and the abuse of persons who fall in a fit on public streets are to be prevented. In receiving and treating patients no exception will be made as to color, creed, race or religion.

Saint Gerard's Hospital.—An institution by this name was dedicated three or four days ago. Dr. J. B. Murphy will be the chief surgeon of the hospital.

Medical Legislation of Illinois State Medical Society.—This Committee has been studying the existing medical laws and the means for their improvement. The Committee sees plainly that it will be unable to secure or maintain the most desirable legislative measures without a more complete organization behind it. Among the questions which are demanding solution in Illinois are a thorough organization of city, county and State boards of health with proper relations to each other; more adequate sanitary laws, especially those relating to schools, manufactories, and quarantine; to secure legislation to protect against tuberculosis and other preventable diseases; to protect against vicious legislation, for example, antivivisection and antivaccination; to protect from blackmailing and to protect against unjust malpractice suits; to secure proper recognition of expert testimony; to protect the sick from quacks and charlatans; to protect and improve the medical practice act and to secure a special board of medical examiners, aside from the Board of Health; to secure proper regulations for the protection of drinking waters, and to aid in securing just and impartial legislation whenever and wherever needed; to secure equitable medical laws throughout the United States, with some practical form of reciprocity between the States; to secure the appointment of reputable and honorable medical men wherever public services of physicians are required throughout the State. The Committee hopes to have hearty cooperation in pushing forward the work along these lines.

Officers of the Chicago Gynecological Society.—The annual meeting was held October 19, 1900, and the following officers were elected: President, Dr. Reuben Peterson; First Vice-President, Dr. E. Lester Frankenthal; Second Vice-President, Dr. Henry Banga; Secretary, Dr. William H. Rumpf; Treasurer, Dr. Addison H. Foster; Editor, Dr. Charles S. Bacon, and Pathologist, Dr. Emil Ries.

Smallpox and Property.—A suit was recently brought against the City of Chicago by the owners of land near the smallpox hospital, opened by the municipal authorities on Lawndale Avenue in 1896, to recover damages alleged to have been sustained by their property in consequence of the proximity of this objectionable institution. The plaintiffs were unsuccessful in the court of first instance and have just been finally defeated in the Supreme Court of Illinois. There was no charge that the City had been in any respect negligent in the care and conduct of the hospital or that it was any more of a nuisance than such an institution must be of necessity. The Supreme Court holds that the erection and maintenance of a smallpox hospital within the limits of a city may be justified in the exercise of the police power of the State, and that there is no difference in principle between the right of a municipality to establish such an institution and its right to build a jail, fire-engine house or calaboose. The City would be liable only for an abuse of discretion in locating such a hospital, of which there was no suggestion in the present case.

Appointment of Dr. Webster.—Governor Tanner has appointed Dr. George W. Webster as a member of the State Board of Health to succeed Dr. R. F. Bennett, who has left the Board to become Superintendent of the Southern Hospital for the Insane at Anna.

The Senn Room.—The Senn room in St. Joseph's Hospital, endowed with $10,000 by Dr. Nicholas Senn, has been opened formally. The room is completely furnished by its donor, and the endowment fund will remain intact for its perpetual maintenance. The room is large and spacious, and is considered one of the best in the institution. The furnishings include a library of 500 volumes. The sisters of the institution are having painted a large picture of Dr. Senn, which will also be given a place in the room. During Dr. Senn's lifetime he will have the privilege of designating patients for the room, who will be cared for without expense.

Medical Inspection of Schools.—One or two members of the Board of Education are opposed to the medical inspection of children who attend the public schools on the ground of expense. Friends of medical inspection, however, are determined that this department shall not be abandoned in order to provide funds for the maintenance of kindergartens or other branches of instruction. Parents who look upon medical inspection as a sort of life-saving station in the public schools are protesting to the Board from all over the city. It is more important that the schools be kept free from epidemics than that the full program of studies be carried out. During three and a half months of the last school year 76,000 examinations were made, and 4539 cases of contagious disease were discovered and excluded from the schools. Since September 17th of the present year 7249 examinations have been made and 510 contagious cases have been excluded. These figures speak volumes for the continuance of the system of medical inspection.

GENERAL.

Wyoming State Medical Society.—At the last annual meeting of this body, held October 9, 1900, at Cheyenne, the following papers were read: "The Treatment of Disease with the Alkaloids," by Dr. S. B. Miller of Laramie, Wyo.; "Periosteal Osteosarcoma of the Upper Extremity of Femur," by Dr. Leonard Freeman of Denver, Colo.; "Enteric Diseases of Children," by Dr. J. B. Wilson of Laramie, Wyo.; "Venereal Disease and Its Relation to Marriage," by Dr. P. Hyrup Pederson of Laramie, Wyo.; "Dysentery," by Dr. E. Stuver, A.M., of Ft. Collins, Colo.; "Minor Surgery," by J. Harvey Young of Rock Springs, Wyo.; "Certain Blood Diseases, with Exhibition of Mounted Specimens," by Dr. J. N. Hall of Denver, Colo.; "Mountain Fever," by Dr. R. Harvey Reed of Rock Springs, Wyo.; "Elbow Fractures and the X-Ray," by Dr. W. W. Grant of Denver, Colo.; "Our Present Coroners' Law; with Some Recommendations Growing out of Experience," by Dr. W. C. Burke of Rock Springs, Wyo.; "Meningitis," by Dr. I. R. Swigart of Laramie, Wyo.; "Our State Laws in Reference to Contagious Diseases," by Dr. R. Harvey Reed of Rock Springs, Wyo. The following officers were elected for the ensuing year: President, Dr. E. E. Levers; First Vice-President, Dr. S. B. Miller; Second Vice-President, Dr. W. A. Jolley; Third Vice-President, Dr. Charlotte Hawk; Secretary and Editor, Dr. J. R. Swigart; Treasurer, Dr. W. L. Wicks. The next annual meeting will be held at Evanston, Wyoming.

Obituary.—Dr. William F. Reilly, an eminent physician of Southern Pennsylvania, died at Carlisle, Pa., October 20, 1900, from stomach hemorrhages, aged thirty-eight years. He was connected with the National Guard of Pennsylvania for eleven years as an assistant surgeon, and served in the Spanish war.

Riotous Medical Students Fined.—The medical students who were arrested for breaking up the meeting of Mr. John Alexander Dowie, the Zionist of Chicago, in London were punished with small fines.

St. Luke's Bethlehem, Pa.—Generous gifts have been announced by Dr. Estes of St. Luke's Hospital, in Bethlehem, Pa., including a fund of $10,000 from former President E. P. Wilbur of the Lehigh Valley Railroad for the support of a children's ward, and a new $20,000 operating ward, to be erected by Samuel Thomas of Hokendauqua, Pa.

The Reformation of America.—We are glad to learn that the *Bristol Medico-Chirurgical Journal* is not responsible for the statement quoted in our issue of September 29, 1900. It was the product of its former editor and had been inserted in a reprint issued by that gentleman.

CORRESPONDENCE.

VENTROSUSPENSION OF THE UTERUS.

To the Editor of the Medical News:

Dear Sir: Your issue of October 6th publishes a description of my method of operation on ligamentopaxis (Round Ligament Ventrosuspension of the Uterus) by Dr. D. Tod Gilliam of Columbus, Ohio, which gives the details of the operation, but does not mention my name.

My method was first published and illustrated in the *Centralblatt für Chirurgie,* August 21, 1897. It was also reported by Dr. C. A. von Ramdohr before the New York Obstetrical Society in the same year, and was the subject of a graduation-thesis at the University of Paris under the auspices of Poirier, Berger, Guyon and Albarran. Garrigues's "Diseases of Women" also contains it, and the *American Journal of Obstetrics and Diseases of Women and Children,* Vol. XLII., No. 3, 1900, gives a description of the original operation and its modifications.

I must assume that all this was entirely unknown to Dr. Gilliam, and that on being informed of the facts he will correct the omission.

Carl Beck.

New York, October 9, 1900.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, October 9, 1900.

THE OUTBREAK OF PLAGUE IN GLASGOW APPARENTLY TERMINATED—MALARIA AND MOSQUITOES—COLLECTION AT THE SOUTH KENSINGTON MUSEUM OF MOSQUITOES FROM ALL THE COLONIES FOR IDENTIFICATION AND CLASSIFICATION—THE SUPPLY OF PURE MILK TO HOSPITALS—THE GENERAL ELECTION—MEDICAL QUESTIONS INVOLVED.

The Glasgow outbreak of plague fortunately seems to have run its course, thanks no doubt to the prompt and vigorous measures taken by the authorities of which I have already informed you. For more than a week no fresh cases have occurred. The total number of cases admitted to hospital is 27, of which 5 have been fatal. Only 8 cases have been severe. Seven were so mild that, but for their association with other cases, the suspicion of plague would not have been aroused. Over 60 persons who have been in association with plague patients have been immunized by subcutaneous injections of Yersin's serum in doses of 10 cc. Of these 2 have exhibited the disease in a very modified form.

The question of malaria and mosquitoes is receiving great attention here. In a previous letter I forwarded you an account of the brilliant and dramatic demonstration of Dr. Manson's theory, which has been carried out with the help of the Government in the Roman Campagna and also in the London School of Tropical Medicine. But in other directions also the Government has been active. In 1898 a committee was jointly appointed by Mr. Chamberlain, the Colonial Secretary, and by the Royal Society to exercise a general supervision over a scientific investigation of the question. An order was issued by the Governors of all the Crown Colonies to have collections made of the different species of mosquitoes and allied insects and to send them to the Natural History Museum at South Kensington for examination and classification. Directions for collecting, mounting and preserving the insects were drawn up by the Museum authorities and distributed to the Colonies. As a result over 3000 specimens have been received and more are coming in every week. The work of identifying and describing the specimens was first entrusted to Mr. E. Austen, the dipterist on the staff of the Museum. But, as he volunteered for active service in South Africa, the work was transferred to another professional dipterist, Mr. Theobald, one of the few men in England who have studied mosquitoes. He is now engaged in the preparation of a monograph on mosquitoes based on the collections in the Museum. The genus *Culex*, which has been shown to be the medium for the transmission of malaria, is represented in the Museum by 22 specimens, 10 of which are new to science. Unlike the *Anopheles*, *Culex* has not a wide distribution in regard to species, although the genus is world-wide. One of the greatest distances between any two localities for the same species is Formosa and the Straits Settlements. Some species of *Culex* have a wide distribution; thus, one species has been sent from the following widely-separated localities: Japan, Formosa, Hong-Kong, Malay Peninsula, India, South and West Africa, North and South America, West Indies, and Gibraltar. As many species are obscure, photographs of the wings and drawings of various parts are being prepared, of which figures will be given in the proposed monograph.

Some interesting experiments have been made at Paisley with a view of ensuring a pure milk supply for the patients in the Infectious Disease Hospital. A new byre has been constructed on the most modern principles and is designed to hold 14 cattle. It is ventilated artificially as well as naturally and is better lighted than the usual run of such buildings. A number of cattle were purchased and submitted to the tuberculin test. Those who reacted were slaughtered, so that only healthy cattle were housed. Especial precautions are taken to ensure purity of the milk. When taken from the cows it is immediately put into cans which are fitted with a lock-and-key arrangement, so that they cannot be tampered with on their way to the hospital. Thus the supply of milk to the patients in an absolute condition of purity is ensured.

The country is now in the throes of a general election and several medical questions are involved in the points before the electorate. Though the medical profession is overwhelmingly conservative, a good deal of dissatisfaction is felt with the outgoing Government. Even the *Lancet*, which, like all old and well-established institutions in this country, in matters political on the side of the things which are (how different was the aggressive radicalism of its younger days), attacks the Government on several points, while carefully guarding itself against pronouncing in favor of either party. "There have been lamentable exhibitions of weakness," it says, "in both the great parties in the state in regard to the greatest questions of medical science." The Government has introduced into the Vaccination Acts an unprecedented individual—"the conscientious objector" and deliberately refused to carry out its promise of a "Revaccination Act." It has thrown away an opportunity for guarding the public from gross injury at the hands of companies posing as medical practitioners. Bills for amending the lunacy laws, improving the position of medical officers of health and a very uncontentious bill for amending the Medical Acts, have failed to pass for the want of interest of the Government in non-political questions. On the highly important Midwife Bill it did absolutely nothing.

A Correction.—Dr. Eugene Wasdin desires to call attention to the fact that in his letter of the 13th inst. in the Medical News, the word opposite was substituted for the word *apposite*.

SOCIETY PROCEEDINGS.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twenty-Sixth Annual Meeting, Held at Asheville, North Carolina, October 9, 10 and 11, 1900.

The Association met at the Battery Park Hotel under the presidency of Dr. Harold N. Moyer of Chicago.

Adresses of welcome, on behalf of the City and State, and of the local profession, were delivered by the Honorable Theodore F. Davidson and Dr. John H. Williams.

Presidential Address.—Dr. Moyer referred to matters of general interest to the profession. He dwelt at length upon an address which was delivered at the International Medical Congress by the distinguished American colleague—Jacobi, who saw fit to discuss the old code question. The speaker thought it unfortunate that this subject, long since dead, but not buried, should be embalmed in the records of that Congress. As to medical societies, there cannot be too many of them. In no other country are these societies so numerous as in America. They are usually well attended. In foreign countries these societies are for the few; in this country they are for the many, and it is to their collective voice, speaking in no uncertain tones, that the profession owes the uplifting of medical education.

Medical Legislation.—The passage of medical acts has been urged by the medical profession, and physicians have been distinctly misunderstood in their attitude toward such legislation. Legislators feel that in some way the medical profession wishes to put a fence around the practice of medicine that physicians inside may fatten upon it. This is not true. Physicians do not urge the passage of medical practice acts for their personal aggrandizement, but simply to protect the people, to prevent the illegal practice of medicine by unqualified persons and by quacks.

Specialism.—If anything can be said in criticism of the medical profession in this country it is the overweening inclination toward specialism. A physician should spend several years in general practice before adopting a specialty. Specialism has done many good things for medicine, but practitioners should see to it that it is not overdone. If a physician wishes to acquire a broad general culture, it can only come from general practice. The selection of a specialty should, like matrimony, come naturally and without being forced.

Abdominal Versus Vaginal Hysterectomy.—Dr. H. O. Walker of Detroit, Mich., read this paper. He said that the question of the best approach surgically to the uterus and adnexa has not been settled. Cancer of the uterus is not an infrequent cause of death in women. The question of recurrence of cancer of the uterus is very important and is immediately connected with the method of its removal. The manner of recurrence of cervical carcinoma is either by extension into the broad ligaments, from the vagina downward and other contiguous parts, as the bladder and rectum, and occasionally to the body of the uterus, or by metastases through the lymph-channels and by distinct direct implantation. The surgeon should be governed by the method of operation which will offer the best advantages in guarding against recurrence of the disease, and in order to illustrate this the author reported two interesting cases, one of which was a vaginal, the other an abdominal, hysterectomy. The report of one case showed what he could not have done by the vaginal method; the other portrayed what he could have done better, more safely and more surely by the abdominal method. All things being equal, the abdominal route offers advantages that do not pertain to the vaginal route. (1) The surgeon is better able to see what he is doing. (2) He is much better able to control hemorrhage by the abdominal than by the vaginal route when he is working in a dark cavity. (3) The danger to the ureters is minimized, and, if injured, the opportunity for repairing them is better. (4) The prevention of sepsis is more certain by the abdominal than by the vaginal route, aided in the first instance by the Trendelenburg posture.

Cancer of Uterus and Treatment.—This paper was contributed by Dr. R. S. Sutton of Pittsburg, Pa. Cancer operations should not be recommended as curative, but as palliative and therefore useful. Total vaginal extirpation of the uterus, at or after the time of the climacteric, should find a place as prophylactic treatment against cancerous disease. The treatment for existing cancer of the uterus has probably reached its complete evolution. With reference to the question of prophylaxis, the average age of patients operated on was forty-three years and a fraction, and it was claimed that, if these patients had all been subjected to total vaginal extirpation at the average age of forty years, all of them would have escaped cancer of the uterus. According to his own statistics, but 4 per cent. of the cases would have died; whereas nearly 100 per cent. of these cases did die within a period of two or three years after operations for cancer. Greater attention should be given by physicians at large to the early repair of lacerations of the cervix and to painstaking observation and consideration of that train of symptoms preceding and leading up to the development of uterine cancer. He unequivocally recommends radical surgical treatment in all such cases, and clearly announces that if the number of cases of uterine cancer and consequent mortality in the future is to be diminished it must be done in forestalling the disease.

Dr. Edward W. Lee of St. Louis, Mo., favors the abdominal operation in a large majority of the cases. He believes it is easier to perform; the operator can see what he is doing; he has a more perfect control of the tissues, and can do a more thorough operation.

Dr. Chauncey D. Palmer of Cincinnati, O., said that until the past few years the vaginal method was preferred to the abdominal. The causative relation between laceration of the cervix uteri and cancer of the uterus is so clearly defined that its importance ought to be recognized by all physicians.

Dr. J. Wesley Bovee of Washington, D. C., mentioned three classes in which vaginal hysterectomy for cancer of the uterus, with the removal of such other structures as may be involved, is advisable. In very feeble patients, who are not able to stand a prolonged operation, he favors the combined method advocated by Ries, Clark, Werder, and others. The combined operation has been done by him in thirteen cases, all of whom are living, with two recurrences.

Dr. A. H. Cordier of Kansas City, Mo., said that in cases in which there is extensive involvement of the cervix by the cancerous process, implicating the bladder and rectum, his patients have been much benefited by thoroughly curetting the cancerous mass, then using the Paquelin cautery, and packing the parts with carbide of calcium. Along with this treatment he uses the old Goodell vaginal injection of permanganate of potash.

Dr. William F. Barclay of Pittsburg, Pa., said that the general practitioner is to be censured to a certain extent for not referring cases with cancer of the uterus early enough to specialists. For years he has made it a rule, when in doubt as to the diagnosis of disease of the uterus and where there was complaint on part of the patient, to refer the case to a specialist, and he has been satisfied with the result. The earlier operations are done for this disease, the greater the prospect of prolonging life.

Post-Operative Internal Hemorrhage.—A paper on this subject was read by Dr. A. H. Cordier of Kansas City, in which he drew the following deductions: (1) In diagnosticating post-operative hemorrhage the history of the patient will aid much. (2) Symptoms of shock and hemorrhage are very similar. (3) In suspected cases the cutting of a single stitch in the incision will tell. (4) In cases in which bleeding is anticipated a tube should be used. (5) The surgery must be quick and decisive in these cases. (6) Large quantities of normal saline solution will save many patients. This should be used both per rectum and into the veins. (7) Strychnine, belladonna, etc., will not control bleeding from the uterine or ovarian artery any better than from the radial or temporal. (8) The surgeon should do what his surgical conscience tells him is right.

Intermittent Hydrops of the Knee.—Dr. George W. Cale of Springfield, Mo., reported the case of a woman, forty-five years of age. Her trouble began five years ago. There was no history of injury. There was a rapid accumulation of fluid in the left knee-joint, which, however, was not painful. This would disappear in from one to four weeks, with or without treatment. The disease would recur at periods varying from one to six months.

Ventral Hernia Following Laparotomy.—This paper was read by Dr. E. Brindley Eads of Chicago, Ill. The occurrence of ventral hernia as a sequence of abdominal section is so common that it should command thoughtful consideration. The author urged the adoption of those methods which personal experience has demonstrated to be of the greatest use, both immediate and remote. As intact innervated muscular fiber is the only safeguard against hernia following laparotomy, the first rule is to make the abdominal incision parallel, or nearly parallel, with the direction of the motor nerves, and of the most important muscular fibers supplied by these nerves. In considering the incision the following points must be taken up: (1) The length is largely dependent upon the thickness of the superficial fascia; it must be sufficient to allow free access to the muscles whose functional integrity is essential to success. (2) The length must be relatively greater than when muscular fibers are to be separated instead of divided. (3) It must vary with the pathological condition. (4) An opening of sufficient size must be secured for thorough exploration and to obtain the requisite degree of precision and rapidity in manipulation. (5) A long incision through the skin and superficial fascia does not predispose to hernia. (6) It lessens the mortality by providing ample space for the protection of surrounding viscera. (7) It lessens shock by diminishing the time required for the operation, and also the duration of the anesthesia. Several incisions were mentioned. The difficulties he has experienced in reaching the appendix through the McBurney incision in acute suppurative cases of appendicitis has caused him to devise another method of approach in a more dependent part. This incision overlies the outer border of the cecum and leads directly to the appendix. It is slightly curved outward and downward, crossing an imaginary line drawn between the anterior superior iliac spines. The center of this curve is from an inch to an inch and a half to the inner side of the right superior iliac spine. The skin and superficial fascia are incised for about two inches. This freely exposes the aponeurosis of the external oblique, which is separated by means of the dry dissector, or the handle of a scalpel, in the direction parallel to its fibers and well retracted. This brings into view the transversely arranged fibers of the internal oblique, and transversalis muscles, and the twelfth abdominal, ilio-hypogastric, and possibly the ilio-inguinal nerve, which are in turn retracted in order to reach the transversalis fascia, which, together with the peritoneum, is divided transversely. The advantages gained by this incision are: (1) It provides easy access to the diseased area. (2) It enables the operator accurately and securely to protect the peritoneal cavity from infection. (3) It lessens liability to breaking down the inner limiting wall of adhe-

sions. (4) It affords a better opportunity to open the abscess cavity from the outer side. (5) It favors drainage. (6) It has not been followed in the author's experience either by appendicular fistula or post-operative hernia.

Gangrene of Scrotum and Penis.—Dr. E. H. Richardson of Atlanta, Ga., narrated the history of a case which showed the initial lesion to have been an abrasion of the skin near the os pubis, with probable infection with the erysipelatous cocci at this point, and later a mixed infection from the streptococcus of gangrene, terminating in the destruction by the gangrenous process of the entire integument of the penis and of three-quarters of the scrotum. A plastic operation was made, with the result that the integument of the penis and testes was preserved. The patient made a perfect recovery.

Tracheloplasty.—Dr. Henry P. Newman of Chicago read this paper. He calls attention to the great importance of the function of the cervix uteri in relation to disease in women. In former times cervical lesions were recognized as a fruitful source of gynecic evils, and many operations and instruments were devised for their correction. Emmet's trachelorrhaphy, once so popular, has ceased to be adaptable to the needs of to-day in repairing cervices. Dr. Emmet, in conceding this himself and offering amputation as a substitute, states that the great advance in the obstetrical art and the methods of caring for a lacerated cervix in labor have altered the character of surgical pathology. The author finds the indications for plastic work upon the cervix still sufficiently widespread to justify the presentation of a new method of operating. This he calls tracheloplasty or plastic work designed not only to restore normal contour and relation, but to reestablish proper function. The distinctive features of the method are the use of a specially designed knife, the shape of the flaps in the anterior and posterior lips of the cervix, clean, smooth-cut surfaces, accurate approximation of flaps, the certainty of restoring the proper lumen of the canal, and the simplicity of the after-treatment. Neither tracheloplasty, nor any one operation of the kind, should be relied on to correct all the ills which accrue from lacerations in childbed. It is frequently necessary to do such simple work as shortening the round ligaments or suspending the uterus, when there is a displacement of the uterus; divulsion and curetting when disease has extended to the endometrium above; repair of the pelvic floor when, through relaxation or trauma, there is a hernial condition of the rectum, bladder, vagina, or superimposed viscera; sometimes even the opening of the abdomen for plastic work, or resection of pathological conditions of the ovaries, tubes, etc. Any one or two of these accessory operations may be necessary to restore the patient, although the disease or deformed cervix may have been the essential, perhaps the sole, etiological factor in the case.

Middle-Ear Disease and the Cranial Cavity.—Dr. O. J. Stein of Chicago read this paper and pointed out the necessity of recognizing the importance of possible intracranial complications in every case of middle-ear disease. The various avenues of infection were dwelt upon at length, these being illustrated by beautiful drawings and specimens. The symptomatology of intracranial phlebitis, thrombosis and abscess was discussed, and several instructive cases reported. In connection with this paper Dr. J. Holinger of Chicago gave an interesting stereopticon demonstration.

Address in Medicine.—This was delivered by Dr. I. N. Love of New York. He selected for his subject "Nutrition and Stimulation." Continuance of life, beginning with the original protoplasm, the cell, depends upon proper nourishment. The proper nutrition of the new being, from the very beginning, prior to birth, should be carefully considered. The entire scheme of tissue-building, of repair, of maintenance of the mechanism of the human body involves not only nutrition, but perfect elimination, and the two together are expressed in the term metabolism. Interrupted metabolism tends toward organic disease and, finally, death. Perfect metabolism means perfect health. Stimulants are of value, if used in the right way and at the right time. In the healthful condition they are not needed. Coffee and tea are essentially domestic pleasures, and, while seemingly harmless, they are potent whippers-up of energy and should be used with great care.

The Treatment of Perirectal Abscesses.—Dr. John L. Jelks of Memphis, Tenn., said that rectal abscesses, when properly treated, are not as serious as when it was the practice to use poultices and await pointing. These abscesses need not result in fistulæ, unless they are the result of malignant diseases, as tuberculosis, cancer and syphilis. Simple incision and drainage of these abscesses do not get rid of their walls, hence this barrier to infection remains as an irritant and causes suppuration. In many cases the abscess-wall becomes calloused, and all efforts to establish granulation are futile. When one is able to elicit fluctuation, free opening and irrigation may result in cure. With a sharp, irrigating curette all of the abscess-wall should be removed and the cavity thereby converted into a surgical wound. Formalin solution is best for irrigating these cavities and they should be packed with iodoform gauze. After thus treating these cases no further suppuration need be expected. Superficial abscesses should be dealt with in the same manner; or they may be frozen and excised as the surgeon would a tumor. They are, when otherwise treated, liable to infect deeper structures. Local anesthesia will suffice, for curettage can be properly practised with it.

Enucleation for Hemorrhoids.—Dr. J. Rawson Pennington of Chicago contributed this paper, which was profusely illustrated. He gives a cathartic two nights before the operation, a saline the following morning and a bath, and colonic flushing the night before. The next

morning he gives an enema of from one-half to one pint of cool water, and operates two hours later He emphasizes the importance of carefully examining the entire rectum. He grasps each anal quadrant at the muco-cutaneous junction with a pair of forceps; the anus is everted and the internal tumors exposed. Seizing the forceps attached to the posterior quadrant, he fully everts it, and with a pair of scissors curved on the flat cuts off the redundant membrane only, which is usually about one-third or one-half of the uppermost part of the hemorrhoidal node. This permits the blood in the tumor to escape. All of the angiomatous tissue is carefully removed, when the remaining wall collapses. Each quadrant in regular order is treated in a like manner. A stream of hot sterilized water flows continuously over the field during the operation. Spurting vessels, if any, are caught with forceps and thoroughly twisted. Should this fail to control hemorrhage, he ligates the vessel. After the operation he introduces a rubber-covered tampon. The advantages of this method are: There are no stumps to slough; no nerves are caught and squeezed; nor are the nerves and tissues burned to a crisp, as when the clamp and cautery are employed; the formation of stricture is obviated. The patient is given a cathartic, and the tampon painlessly removed at the end of forty-eight hours. There is no pain nor bleeding with the movement of the bowels. After the bowels have moved, the patient is instructed to keep the stools soft for two or three weeks by taking compound licorice powder or Apenta water, the latter being very palatable and effective. He has performed this operation in fifty cases, with more satisfactory results than he has obtained by any other method.

Obstipation.—Dr. Sterling B. Taylor of Columbus, O., read this paper. Obstipation was defined, and a comparison of obstipation, constipation and costiveness made. The causes of obstipation were dwelt upon and classified. Hypertrophy of the rectal valve was emphasized as the usual cause of obstipation. The essayist defended the views of Martin and his method. The symptomatology of the affection, palliative and radical treatment were discussed, the author closing his paper with the citation of several cases.

Tuberculosis of the Spine.—Dr. Alexander C. Wiener of Chicago contributed a paper on this subject. He made a plea for early diagnosis before deformity is noticeable. Extension and hygienic treatment are essential in avoiding complications, such as paresis and gravitation abscess. He exhibited a specimen which illustrated the possibilities of forcible correction of the spine. He narrated cases of psoas abscess in which he had effected a cure with injections of concentrated carbolic acid.

Treatment of Cervical Lymph-Nodes.—Horace H. Grant of Louisville read this paper. The purpose and function of the lymphatic glands were dwelt upon. The author showed how they may be rendered useless and harmful by disease and disintegration. He pointed out the limitations of medical and expectant treatment, and outlined the indications for the various surgical procedures.

Fulminating Appendicitis.—This was the subject of the Address in Surgery delivered by Dr. Charles A. Wheaton of St. Paul, Minn. He said that every case of appendicitis is and by rights should be considered surgical, because the surgeon's training specially qualifies him to best interpret the meaning of the symptoms encountered. Every case of so-called fulminating appendicitis should be operated on as soon as its distinctive characteristics are known. High temperature and accelerated pulse, associated with local pain and rigidity, are strong presumptive evidences of malignancy in the attack, and if associated with vasomotor disturbances are practically proof positive of perforation. The surgeon who refuses the only chance that drainage may give even the most desperate cases is false to himself and fails materially in discharging his obligations to his patient, obligations which the patient has a right to expect at his hands. A puncture in the median line, in the loins, or in a woman in the posterior cul-de-sac, under local anesthesia, does not add to the danger of the condition, and it materially aids nature in the awful up-hill fight. In short, in every fulminating case, operate first, and philosophize afterward.

Subarachnoidean Injections of Cocaine.—Dr. Carl H. Andersen of Chicago spoke on the use of such injections in operating below the diaphragm. He referred to the work of Tuffier, Bier, and others in this comparatively new field, saying that sufficient credit had not been given to Leonard Corning as the originator and adviser of this method of anesthesia. He described its technic, which is substantially that outlined by Tuffier, and reported six cases in which he had resorted to the method. (1) Hydrocele, with vague history. Patient, colored, twenty-eight years of age, strong and healthy. Subarachnoidean injection of 15 minims of a two-per-cent. solution of cocaine. Anesthesia complete. On opening the scrotum sarcoma of the testicle was found and removed. Ninth day after operation patient died from pulmonary embolism. (2) Varicose veins of the leg. Injection of 8 minims of a two-per-cent. solution of cocaine. Anesthesia lasted five hours and ten minutes. No pain during operation. Perfect recovery. (3) Trachelorrhaphy. Cocaine anesthesia. As soon as operation was finished the patient fainted and remained in that condition for two hours. Under strychnine and salt water per rectum, she rallied and recovered. (4) Amputation of toe in a man, seventy-two years of age. Seven minims of a two-per-cent. solution of cocaine injected. Uninterrupted recovery. (5) Operation for suppurative appendicitis. Patient, woman. Operation performed at 10 A. M.; at 2 P. M. patient showed symptoms of medullary irritation, pain in the back, and severe headache. The patient had a

terrific headache for several days after the operation. (6) Version and use of forceps. At the suggestion of Dr. Harold N. Moyer, Dr. Andersen injected 16 minims of a four-per-cent. solution of eucaine B in this case, with very satisfactory results. Patient suffered no pain whatever. Eucaine B can be perfectly sterilized by boiling. Dr. Andersen spoke of the difficulties attending the sterilization of cocaine, and outlined a method by which this can be accomplished. He regards lumbar puncture as a serious operation, and urged practitioners to be exceedingly cautious in employing it. These cases were reported for the express purpose of warning the profession that the method is far from harmless, and if it is employed indiscriminately it will lead to disastrous consequences.

In the discussion, Dr. Harold N. Moyer said that if asked in regard to the use of this method of anesthesia, he would say, do not use it. No surgeon should undertake it unless he has a well-equipped laboratory. The method is at best in its experimental stage, and further research and experiments should be carried on in well-equipped clinics until the possible dangers of this method are better and more clearly understood. Among the dangers are the toxic properties of the cocaine. A four-per-cent. solution of eucaine B can be used with absolute safety. It is about one-third as toxic as cocaine, and one-half as anesthetic as cocaine, but it can be absolutely sterilized. The danger of infection from such injections is considerable and should not be overlooked. As to the remote dangers from this form of anesthesia, cases have not been observed sufficiently long to enable surgeons to say whether or not there are such dangers.

Tuberculous and Purulent Hip-Joint Disease.—Dr. A. M. Phelps of New York said that all abscesses, tuberculous or purulent, should be opened as soon as the diagnosis is made for the purpose of exploration; secondarily, for drainage and for any surgical procedure which may be deemed advisable. Excisions should be performed when the acetabulum is extensively diseased, the diseased tissues removed, and the joint thoroughly washed out with pure carbolic acid, then with pure alcohol, and finally with a two-per-cent. solution of carbolic acid, and as large a drainage-tube of glass as the wound will take should be inserted. Through this large drainage-tube the packing for drainage purposes can be made. The large glass speculum enables the operator to watch every pathological change which takes place. It keeps the soft parts widely separated and prevents their union until after the bone has granulated up and healed. It enables the operator to dress his patient without doing violence to the granulating surfaces of the wound and inflicting unnecessary pain. All rubber drainage-tubes should be entirely discarded, as they are filthy, collapsible, and are a source of infection. The carbolic acid is absolutely neutralized by the action of the alcohol. Local carbolic poisoning, and even when the drug is taken internally, is neutralized by the action of the alcohol.

Pulmonary Tuberculosis in Infancy and Childhood.—By Dr. Frank P. Norbury of Jacksonville, Ill. This disease is not rare in children. Heredity is of etiological importance, but it has lost its prestige and it has been shown that infection is the main etiological factor. The mode and route of infection are important considerations. Northrup, Carr, and others have shown that tuberculosis starts most frequently in the thorax. Pulmonary affections, such as whooping-cough, influenza, etc., create favorable conditions for infection. Enterocolitis and gastro-enteritis create portals for intestinal infection. Milk is a source of infection. Tuberculous meat, too, is a source of infection. Differential diagnosis from bronchopneumonia can only be made by laboratory methods. Acute miliary tuberculosis and bronchopneumonic tuberculosis are most frequently found in infants and children. The complications are meningitis, empyema, and involvement of bones. The prognosis is grave in almost all cases, but lesions of lungs may heal under favorable conditions. With reference to treatment, prophylaxis during infancy should include attention from birth, if mother is tuberculous; also good hygienic, open-air treatment; climatic change, when possible. The symptomatic care should be the same for children as for adults. Good nutrition should be maintained and as little medicine as possible given. Creosote and simple tonics are recommended.

The Physician as a Sanitarian.—Dr. Hugh A. Cowing, of Muncie, Ind., discussed preventive medicine; hygiene of infection; the physician as a factor in the spread of infection; the physician and the health officer; health legislation, and the physician and the public schools.

Philosophy of the Science and Art of Medicine.—By Dr. William F. Barclay of Pittsburg, Pa. True and false philosophy should be appropriately applied to results obtained in rational conclusions. The philosophy of medicine is the comprehension of the truth in the investigation of the science, enabling one to arrive at rational conclusions in the study of physical laws which govern organized matter in normal and pathological condition.

Asthma.—Dr. B. Alexander Bate of Louisville said that modern opinion seems to regard asthma as a neurosis of the pulmonary plexus due to arthritism. In bronchial asthma uric acid in the blood so alters nutrition as to cause a neurosis, thus inducing hyperesthesia and engorgement of the bronchial mucosa, spasmodic contraction of the muscular fibers, and the various manifestations of metabolism. Asthma frequently alternates with such diseases of the arthritic diathesis as neuralgia, migraine, angina, and gout. Clearing the blood of uric acid has relieved asthma only to be followed by gout, as the uric acid was precipitated into the tissues. Asthma may be said to belong to the class of uric acid diseases due to the effect of high arterial tension in con-

tradistinction to those produced by precipitation of urates into the tissues. The attacks come on most frequently when the blood is loaded with uric acid during the alkaline tides. The causes of asthma were divided into two classes: First, the systemic or essential cause—the arthritic diathesis. Second, the local or exciting cause of the attack. The first of these is perhaps present in every case. Modern methods of treatment have been able to cut short the attacks in most instances and often to prevent their return. After the removal of the exciting cause the treatment consists in the use of such remedies as overcome arterial tension by freeing the blood of uric acid. The treatment of the interval consists in the use of such drugs as eliminate uric acid from the system, and the adherence to such a diet as permanently keeps down arterial tension.

Inebriety and Medical Treatment.—Dr. T. D. Crothers of Hartford, Conn., said that inebriety is a self-limited and largely curable neurosis. The desire for drink is symptomatic. The real causes are central nerve-irritation, exhaustion, poisoning, and starvation. Each case requires special means and measures, particularly adapted to meet the conditions present. The family physician as well as the specialist should treat these cases successfully.

Clinical Application of Suprarenal Capsule.—Dr. W. H. Bates of New York regards the aqueous extract of the suprarenal capsule as the most powerful stringent, hemostatic, and heart tonic known. It lessens congestion of the eye and of other organs. The extract is not irritating or poisonous, and, unlike other powerful drugs, is never contraindicated.

Purgative Mineral Waters.—Dr. Edwin Rosenthal of Philadelphia discussed this subject. He spoke of natural and artificial mineral waters; simple, thermal, common salt, or muriated waters. He dwelt upon the waters mostly met with in commerce, spoke of their chemistry, names, mode of action, uses, method of selection of a special purgative water, etc.

The Law and the Surgeon.—Dr. Dudley S. Reynolds of Louisville, Ky., said that a surgeon must possess a reasonable familiarity with the science of his profession; he must exercise reasonable skill for the locality in which he practises, and must devote due diligence and care in attending to his patient. If the patient declines to submit to treatment, the surgeon does not abandon the case at once, he assumes liability for the result of failure to do that which in his judgment was best for the relief of the patient.

Differential Leucocytosis.—Dr. L. H. Warner of Brooklyn, N. Y., read this paper. Experiments in recent times have given us a better insight into leucocytosis. It has been demonstrated to be due to three causes—digestion, inflammation, and infection. Physiological and biological experiments have proven that by means of medication a true picture of leucocytosis may be produced, but which in reality represents leucocytodiuresis, a condition very desirable in the treatment of disease and a recognition of which is of the greatest value when hematology is called upon to aid in arriving at a correct diagnosis.

Election of Officers.—The following officers were elected for the ensuing year: President, Dr. A. H. Cordier of Kansas City, Missouri; First Vice-President, Dr. Charles F. McGahan of Aiken, South Carolina; Second Vice-President, Dr. Charles L. Minor of Asheville, North Carolina; Secretary, Dr. Henry E. Tuley of Louisville, Kentucky, re-elected; Treasurer, Dr. Dudley S. Reynolds of Louisville, Kentucky, re-elected. Put-in-Bay, Ohio, was selected as the next place for holding the meeting; time, September 10, 11, and 12, 1901. Dr. J. C. Culbertson of Cincinnati, Ohio, was selected as the Chairman of the Committee of Arrangements. The meeting ended with a banquet at the Battery Park Hotel given by the Buncombe County Medical Society.

NEW YORK ACADEMY OF MEDICINE.—SECTION ON MEDICINE.

Stated Meeting, Held Tuesday, October 23, 1900.

John H. Huddleston, M.D., Chairman.

The paper of the evening, read by Dr. Alfred Meyer, was entitled "The City and Its Consumptive Poor; A Plea for a Municipal Sanatorium Outside of the Corporate Limits." (See p. 639.)

Financial Difficulty.—The discussion of the paper was opened by Dr. John B. Cosby, Commissioner of Health of New York City. He said that the need for an institution for incipient cases of tuberculosis such as Dr. Meyer suggested in his paper is very evident. The practical difficulty in the way is the provision of the sum of money necessary for the purpose. The $350,000 proposed by a bill passed in the last Assembly is far beyond anything that city financiers at present think themselves in a position to allow. There remains this question with regard to any appropriation made: Shall it be used by the Board of Health in the furtherance of work now in hand—the purifying of the tenement district from tuberculosis and the like—or shall it be employed to found a special hospital for incipient cases? If an amount sufficient for a hospital cannot be obtained, at least an increase of the present means of fighting tuberculosis should be allowed.

The Present and Immediate Future.—John W. Keller, Commissioner of Charities, sent a note of regret for his absence and some remarks on the subject, which were read by the secretary. He said that at present there is not sufficient room in the charitable institutions of the city to provide places for all the cases of advanced tuberculosis that apply for care and treatment. Within the next year, however, the provision of accommodation for the City's insane in the Manhattan public hospital will leave to the Board of

Charities the whole of Blackwell's Island now given up to the insane. Three buildings will be vacated there, in healthy locations on the East River and separated from one another. These will provide very suitable quarters for a great many additional tuberculous patients. This will obviate the necessity for special provision by act of legislature in the immediate future. The death-rate from tuberculosis in the public institutions of New York during the last year has not been encouraging. A mortality of over 33 1/3 per cent. shows the need for more suitable quarters and care. This mortality will undoubtedly be distinctly lessened when Blackwell's Island will be available for the City's consumptive poor. Personally, Commissioner Keller is heartily in accord with the movement to provide for incipient cases of tuberculosis, but he feels that advanced cases which are so liable to be fruitful sources of contagion need our most solicitous care at once.

Care of Consumptives.—Dr. Hermann M. Biggs said that seven years ago he drew up for the city authorities a scheme for the proper management of consumptive cases. He pointed out that three things are necessary: (1) A receiving pavilion at Bellevue Hospital where the cases could be properly diagnosed and where the tuberculous patients would not be a source of danger to others. (2) The setting apart of special wards for advanced cases. (3) The establishment of a cottage sanatorium for incipient cases. It was suggested that the neighborhood of Central Islip, Long Island, where the City owns some land, would be a suitable place for this cottage sanatorium. The scheme was approved by the Commissioners of Charities, especially by President Porter, but there were no funds available for its accomplishment. Under Mayor Strong the reception pavilion at Bellevue was begun and this is now ready for occupancy.

Number of Consumptives.—Dr. Meyer has said that there are 30,000 cases of tuberculosis in the city. This is an extremely conservative estimate. There are certainly many more than this. The number of incipient cases is set down as 8000. Dr. Biggs is of the opinion that there are at least 15,000 incipient tuberculosis cases in New York, one-half of whom recover and so, perhaps, form no part of the statistics. In 1897 the notification of tuberculosis was made compulsory. Since then the death-rate from tuberculosis has dropped very markedly. While the death-rate in 1889 was 4.4 per 1000, in New York City, last year it was only a little over 2.8. It seems advisable that the money provided by appropriation for the improvement of present conditions with regard to tuberculosis should be spent rather in preventive medicine than in the care of a few favored ones in a sanatorium.

Dr. John P. Faure, ex-Commissioner of Charities, said that the present movement was in line with other great philanthropic purposes now being accomplished here in New York. Floating hospitals have done much to reduce the death-rate among infants in the city. If the mortality from tuberculosis can be reduced the present generation will accomplish something worthy of itself.

Mr. Frederick Sturgis, Vice-President of the Presbyterian Hospital, said that general hospitals cannot provide places for tuberculous patients. They have no room for them and, moreover, the tuberculous would constitute too great a source of danger for other patients. There is absolute need, therefore, for a special hospital for these patients.

Sanatorium Success.—Mr. Jacob H. Schiff, President of the Montefiore Home, said that the Home had tried the experiment of the sanatorium treatment on a small scale at Bedford Station, Westchester County. This proved so successful that they have tripled the size of the sanatorium and now all tuberculous patients are to be sent there. They are, however, unable to cope with the large problem of tuberculosis and think the State and City should take up the question.

Mr. Savage, of Roosevelt Hospital, said that dispensary cases of tuberculosis, *i. e.*, those living in tenement-houses, are a constant source of menace to those living near them. It is a duty to remove these people just as much as if they had scarlet fever or smallpox.

In closing the discussion Dr. Meyer said the present health authorities of New York all favor the sanatorium idea. Even with the additional beds in Blackwell's Island the City will be far from being able to cope with the problem of tuberculosis in our midst. We do not want drastic measures of compulsory segregation, but it is plainly the duty of the City to give its tuberculous citizens the best possible chance for saving their lives and at the same time to protect its healthy citizens from danger of infection.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held Thursday, October 4, 1900.

The President, Wm. H. Thomson, M. D., in the Chair.

Infant Feeding.—Dr. Abraham Jacobi of New York read the report on the artificial feeding of infants which he prepared by request for the International Congress of Medicine at Paris this year. Only an abstract of this report was presented to the Section on Children's Diseases at Paris, and now, by special invitation, Dr. Jacobi read the complete paper. He said that in recent years a great deal of literature had accumulated on the subject of the preparation of food for the infant. Most of this consisted of dictatorial precepts founded on supposedly scientific laboratory investigations rather than on the results of clinical experience. Most of the writers on the subject seem to have overlooked the fact that chemistry is not physiology and that the infant stomach is not a test-tube. Besides this, in Dr.

Jacobi's characteristic way, he said that much of the recent literature on the artificial feeding of infants exhibited the carping spirit so distinctive of ambitious mediocrity. The science of man and of his diseases does not find the solution of its problems in chemical or mathematical formulæ. Certain phases of the recent literature, however, are of great interest and at least suggestive if not of practical value.

Composition of Mother's Milk.—Mother's milk is not the definite compound that some have been accustomed to consider it. The child may thrive on one woman's milk and fail completely to do so on another's. Some standard for the preparation of an artificial food that will more or less resemble mother's milk is needed. A standard is obtained by taking the average of a series of analyses of human milk. The analyses of different examiners have proven, however, rather contradictory. This is not so much to be wondered at, however, if we bear in mind that not only the milk of different women differs, but the milk from the same woman may differ according to her physical condition, according to the amount and character of the food she is taking and even according to her emotional state during a given period. Variations in milk as the consequence of menstruation and of excessive lactation are well known. It has been said that there is more albumin in human than in cow's milk. Whether all of the albumin in woman's milk occurs in the form of casein is not known. Pfeiffer insists that all the nitrogenous substance of milk exists in the casein. This matter is still in doubt. The usual assertions, therefore, with regard to the comparative casein content of human and cow's milk are not absolute. It is known that there is more phosphorus and less sulphur in woman's milk than in cow's milk, also that the inorganic acids and salts of woman's milk are not precipitated as easily from their solution as in cow's milk. It is known that lab ferment produces larger curds when allowed to act upon cow's milk than upon human milk. All of these are important differences between the two substances with regard to their nutritive value.

Phosphorus in Milk.—Nearly all the phosphorus in woman's milk exists in the form of readily absorbable organic compounds. In cow's milk the phosphorus exists in the shape of an organic compound difficult of absorption. This constitutes without doubt one of the great reasons for the frequent development of rickets in bottle-fed babies. Something of the same thing can be said for the iron which exists in milk. There is less sodium in cow's milk and for this reason it is advisable to add sodium chloride to any artificial food whose basis is cow's milk. The necessity for the addition of sodium chloride is emphasized if cereals are added to cow's milk in the preparation of baby food. Zweifel, in the chapter of his new book which treats of rickets and its causes, says that the women of the lower classes in Saxony are accustomed to eat bread that, according to the habit of the country, is made without salt. This has, undoubtedly, according to him, an influence in the causation of the large amount of rickets which is seen in that country. Fortunately for the infant, Nature has permitted considerable latitude as regards the food which may be necessary for a child's nutrition. It is to this fact rather than to any definite knowledge, with regard to the ideal baby food, that is to be attributed the modicum of success the medical profession has had in artificially feeding infants.

Advance in Artificial Feeding.—Just one good step forward in the matter of artificial feeding has been definitely made as the result of these dozens of years of work. This is the heating of the milk—some method of sterilization, Pasteurization or Tyndallization being used. Undoubtedly dirty dairies have been and are still the source of a great deal of disease. Scarlet fever and diphtheria are probably spread more by milk than by any other known means. After water milk is the most serious distributing agent of typhoid fever. The germs get on the hands of those who furnish milk for the market. The bacilli also get into the water in which the vessels are washed. It has come to be realized of recent years that tuberculosis is also occasionally spread by milk. The most serious consideration in the matter is the wonderful rapidity with which microbes grow in milk. A few bacilli find their way into the milk and in twenty-four hours there are millions of them. Only sterilization can protect against these bacterial dangers. Short sterilization is not sufficient and some form of heating is advisable even in winter and in country places where the milk is reasonably fresh. A germ-free milk cannot be obtained. According to the bacteriologists all that is required is that milk shall not contain more than 10,000 germs per cubic centimeter and that none of these shall be pathogenic. It was found in Berlin that some pathogenic bacteria occurred in eighty per cent. of samples of milk obtained in the ordinary course of commerce. Heat to at least 100° C. is necessary to protect against these bacterial dangers, even when the bacteria are not specifically pathogenic. Degeneration of the liver, pancreas and kidney take place as the result of the presence of even non-pathogenic micro-organisms in the intestines. Intestinal irritation produces its effect on the general system, even when the microbes themselves do not find their way beyond the intestinal wall.

Difficulties of Sterilization.—If bacteria contain fat, as does, for instance, the tubercle bacillus, they possess greater resistive vitality than other micro-organisms and require at least 100° C. When microbes occur in fat the same rule holds and the microbes of butter and of rich milk require specially high temperatures for their destruction.

The presence of one-fifth of one per cent. of lactic acid prevents the sterilizing effect of Pasteurization. The presence of lactic acid, however, inhibits the growth of micro-organisms, so

that while it is a disadvantage it is also an advantage. Unfortunately it seems true that when sterilization is conducted at high temperatures a change takes place in the albumin of the milk. At temperatures that fail to destroy the spores of bacilli and that do not affect their toxins milk albumin becomes so changed as to be rendered very difficult of digestion.

Tyndallization.—The only means thus far found to overcome these difficulties in the sterilization of milk is the method invented by Tyndall. This consists of discontinuous sterilization. That is, the liquid to be sterilized is heated several times to a temperature high enough to kill ordinary micro-organisms. In the interval between two sterilizations, microbes that during the first heating were in the resistive spore stage germinate and take up the ordinary bacillary form. These are destroyed by the next heating, and the few spores left in the same way by the third heating. It is now over forty years since Dr. Jacobi first directed that milk for infant's food should be heated several times before use. It is the immortal merit of Soxhlet that he systematized this method of sterilizing milk. It is better that milk should be sterilized by a private family for its own use than that it should be secured from a laboratory which sterilizes it wholesale for commerce. The hay bacillus and Pflüger's bacillus are often found in milk and are especially resistive to heat. Their presence, while not especially dangerous, is undesirable because of certain changes that are induced from the milk. It must be remembered that the membrane formed over milk during the boiling process helps to keep tubercle bacilli alive. Hence the milk should be stirred during the boiling or the scum should be removed as it forms and the boiling continued for some time afterward.

Scurvy.—The idea has gained ground that the sterilization of milk produces changes in it which make it indigestible and so lead to the development of that disease of malnutrition which has become somewhat common of late, namely, scurvy. The American Pediatric Association collected 379 cases of this disease. One hundred and seven of these children had been fed on sterilized milk, while the remainder had been fed in various other ways, a few of them even on mother's milk. It is evident then that sterilized milk is not especially the cause of the disease. Marfan denies all connection between the scorbutic tendency and the use of sterilized milk. He claims that scurvy is always due to overfeeding. Overfeeding, however, has been a failing of mothers from time immemorial, yet in recent years scurvy has become much more common than it was. Dr. Jacobi sees many more cases of it now than he did in the first years of his practice. He is convinced that the increased number is not due to better diagnostic acumen of late years, nor to the fact that the disease is looked for with more care.

Long Duration of Sterilization.—It is probable that whatever influence in the production of scurvy is due to sterilized milk comes from the heat changes produced in the albumin. The proteid material thus becomes inassimilable and the child's nutrition suffers. It has been the custom to think that if heating for twenty minutes did good, heating for an hour would assuredly be of benefit. Some have even recommended the continuation of Pasteurization for from forty to sixty minutes. This is inadvisable and it is from this overcooking that the milk becomes unsuitable to the infant digestion.

Milk Modifications.—Rotch's work in the modification of milk has been most helpful and suggestive. He requires that the cow's milk which forms the basis of the infant's food should come frome large dairies rather than be the milk of one cow. Most infections come from small dairies. The milk should be obtained with the most careful precautions as to cleanliness, should be immediately put on ice and kept thus until ready for use. In order to adjust the proportions of cow's milk, he suggests the separation of the cream from the milk by a centrifugal machine. He then mixes cream and milk in what are considered to be suitable proportions for the given case, diluting where necessary the water or lime-water. Of late he has used barley-water as a diluent. Each infant requires an especially prepared prescription and Rotch has stated that as many as 500 different modifications may be needed for different infants. It is evident that this is a very complex method. It is probable that most infants will thrive on this modified food, but many despite precautions will suffer from mild rachitis and craniotabes. This is because the phosphorus and certain ingredients of animal food are lacking.

Laboratory Preparation.—It is doubtful if the laboratory preparation of milk for infant feeding will ever be a success. This method encourages routine which is just the thing that is not wanted in infant feeding. There are those, moreover, who have seen flies and cockroaches in laboratory bottles. While these insects had doubtless been sterilized in the preparation process in the laboratory, they are not desirable ingredients of baby-food. Laboratory food is besides very expensive. It is not for the poor at all. From three to four dollars a week, or more, is beyond the means of the ordinary family for baby food. It is probable that the separation of milk by mechanical methods that involve over 6000 revolutions a minute, disturb the constitution of the milk. The cream separates and may not again unite. Mice have been fed exclusively on milk and lived, but when the milk was run through a separator and the ingredients mixed again they did not thrive. The reunited ingredients of the milk do not form milk in the true sense of the word.

Milk Sugar.—It is not entirely certain that the milk sugar which occurs in woman's milk is the same as that in cow's milk. Certainly the milk sugar which occurs in commerce is notedly impure. It is probable that for feeding purposes, cane sugar is at least as good. It has been shown that

cane sugar is changed by microbic action into lactic acid. As this is one of the modifications of milk sugar, which is supposed to be of special benefit to the infant because of its inhibitory effect on bacterial growth, one feature of the necessity for milk sugar disappears. In any ordinary cow's milk it is probable that there is enough milk sugar for the infant's nutrition. It is far easier to give too much than too little sugar. It is better to give small amounts of cane sugar than larger amounts of dubious milk sugar. Some milk sugar is absorbed as galactose and glucose, so that the direct use of glucose is not irrational. Marfan gives cane sugar because it is so difficult to obtain pure milk sugar in commerce. Cane sugar should be increased in the infant's dietary whenever the child suffers from constipation. The material makes a simple laxative and does away with the necessity for undesirable drugs.

Fats.—Fats are added by some to cow's milk partly for their influence on the nutrition of the infant and partly because they are supposed to assist the digestion of casein. It is probable that the fat of cow's milk should be reduced rather than increased. In nurslings a great deal of fat is eliminated unchanged. If the amount eliminated becomes excessive, intestinal irritation is set up and a fatty diarrhea is liable to ensue, which still further reduces the amount of fat absorbed by the infant. The fat of asses' milk is low in amount, yet as is well known this agrees very well with children—in fact, better than any other animal milk.

Plain Milk as Food.—In France plain cow's milk is very generally in favor for the feeding of children. In warm weather there is need of diluting the milk and of diminishing the total food taken. There are excellent reasons for high dilution. Babies need much more water as a rule than they are given. It should be given them in their food. It has been objected to this dilution that large quantities of liquids given dilate the stomach. This observation is not the result of clinical experience, but was evidently made at the desk. As soon as the quantity of liquid becomes slightly excessive the child's vertical stomach passes it on and the intestine absorbs it rapidly. Dr. Jacobi has never seen a case of dilatation of the stomach from the consumption of too much liquid, although he is accustomed to give liquids very freely. The lack of sufficient liquid in the system leads to the formation of uric acid infarcts and these predispose to nephritic calculus. Flushing out of the system also avoids irritation of the kidney. Milk if well diluted does not curdle in the thick, indigestible masses that pure milk does. When so diluted it leaves the stomach cleaner, and is liable to give the infant less trouble, for in the infant intestinal indigestion is very important. When infants are given plenty of water there is less loss of weight.

Cereals in Milk.—Of late years the prejudice against the use of cereals in infant's food has gradually been overcome. The dilution of milk with some cereal water, as barley water, makes it much more digestible. It has been said that infants are unable to digest starch, but this has been proved untrue. Heubner found in the infant of two hours, of sixteen days, and of two months, that diastase was present in the parotid. There was none in the pancreas, and pancreatic digestion does not begin until the infant is nearly a year old. The old literature which condemned the giving of starch so vehemently referred to the excessive use, or the exclusive use, of starchy foods. The feces of an infant fed on milk diluted with barley-water contain no fat and very little starch.

Phosphorus in Milk.—In the discussion Dr. Koplik said that the nuclein of cow's milk contains phosphorus, but in a form in which it is frequently not absorbed by the infant. In this respect cow's milk is very different to mother's milk and hence rachitis develops so frequently in bottle-fed babies. Cow's milk must be used, but some simple modification will usually be sufficient and scientific accuracy in the matter cannot be expected. If the infant does not thrive slight changes must be made in the formulæ of modification. Moderately clean and fresh milk can now be obtained and, if on simple dilutions the infant does not thrive, cereals should be added. It is unfortunate that scurvy has been attributed to sterilized milk. Scurvy occurs in any food and is probably due to some pathological process that is interfering with digestion and producing toxemia. There are half a million of sterilized-milk-fed babies and less than 400 cases of scurvy. Scurvy is a curable disease, while affections that come from unsterilized milk are often incurable.

Dr. Chapin said that what we need is clean, fresh milk rather than Pasteurized milk. This can be obtained if the medical profession will give its attention to the subject and educate the dairymen and the public up to the idea of what constitutes good milk. The addition of cereals to milk often assists its digestion and, if the amylaceous material be dextrinized, there can be no objection to it.

Dr. Carr said that if the milk is fresh and clean, very little heat is needed in its preparation as food for the infant. One must adjust the food to the particular case. At times mother's milk disagrees with the child or leads to rickets, and then even this natural food needs modification.

NEW YORK ACADEMY OF MEDICINE.—SECTION ON SURGERY.

Stated Meeting, Held Monday, October 8, 1900.

Charles N. Dowd, M.D., Chairman.

Strangulation by Meckel's Diverticulum.—Dr. J. F. Erdmann presented two cases of this lesion which have occurred in his private practice in the last few months. About six months ago he

presented a third case of this condition. All three of the cases were successfully operated on. The symptoms in all the patients were strikingly similar to those of appendicitis. When the incision was made there was never full assurance that there might not be found some pathological conditions in the appendiceal region. The treatment of the condition was similar to the excision of the appendix. When the diverticulum was of small diameter it was inverted into the gut. When the diverticulum was of large size it was sewed up precisely as would have been done with a bit of intestine. No untoward event has occurred since operation in any of the cases.

Acute Appendicitis.—Dr. Alexander B. Johnson reported forty cases of appendicitis operated upon during the last few months. Among them were eight cases of generalized purulent peritonitis, three of which proved fatal. In six of the cases no appendix was found. The features that seem to be most conducive to successful operations for appendicitis in Dr. Johnson's opinion are the abundant use of salt solution, the employment of a small incision and the exercise of extreme care in exposing the intestines to the outer air. There must positively be no evisceration, if the patient is to be given the best chances for recovery.

Where the general peritoneal cavity has become infected the use of an abundance of hot sterile salt solution at a temperature of 116° to 118° F. seems to be the best therapeutic measure. The salt solution should be introduced in a good-sized stream from a reservoir at least four feet above the patient's head. The flushing out of the peritoneum should be continued until the salt solution returns perfectly clear. The intestines should not be allowed to project out of the abdominal cavity at any time and fibrinous placques of lymph on the intestines should not be removed.

Danger of Evisceration.—Dr. Johnson considers that the immediate effect of allowing the intestines to project out of the abdominal cavity for any length of time is a practically complete paresis, which very seriously affects all the intestinal functions. This is not due to the septic material in the abdominal cavity, but to the reflex action of the chilling on the delicate nervous mechanism of the intestinal circulation. After trauma with intestinal exposure, even before sepsis has begun its work, it is no unusual thing to see such a paralysis supervene.

Points of Technic.—Where a frankly purulent condition exists, no special effort should be made to avoid opening the peritoneum. Where there is an abscess, however, the intestines should be protected as far as possible from contact with the pus by means of warm pads. As a rule all adhesions should be broken up in order to get at the appendix except where the bands are very dense.

Unusual Complications.—The first case, a boy of sixteen, operated on for purulent appendicitis, had a perfectly normal recovery until the tenth day, when his temperature went up and his pulse showed signs of some infective process at work. On the fourteenth day a large abscess was found to exist between the liver and the diaphragm. This was evacuated and recovery took place. In a second case a man of thiry had had several severe attacks of appendicitis during the last ten years. A moderate-sized appendix was found opening into an abscess. The abscess itself had made a second opening into the intestines and had evacuated itself at intervals. The appendix was cut off and the intestinal opening sutured. Ten days later symptoms of intestinal occlusion declared themselves and bands of adhesion were formed, which had evidently been formed during the old attack of appendicitis. These were cut and recovery took place without further injury. The third case was a colored boy of eighteen who presented no tumor and but slight fever, with considerable pain and marked tenderness. A small abscess was evacuated. Three days later the patient began to have chills. Malarial organisms could not be found in the blood. Careful examination showed that there was some consolidation of the right lower lobe. There was evidently suppuration in the upper part of the abdomen. Signs of an abscess were found in the neighborhood of the liver just below the floating ribs. Incision disclosed quantities of broken-down lymphatics, lying near the hepatic flexure of the colon in front of the right kidney. Pyemia supervened and death took place in ten days. No post-mortem could be obtained.

Drainage.—Wherever suppuration has taken place Dr. Johnson thinks that a glass drainage-tube should be inserted and retained for forty-eight hours. One peculiar post-operative complication came as the result of the use of glass tubes. An enormously stout man was operated on for an appendiceal abscess and a glass tube was inserted into his pelvis and allowed to remain. In all nine inches of tubing were used. Some hours after the operation the patient became delirious and restless and while turning over the tube was broken off. A portion of the broken end seems to have cut an artery for symptoms of shock from internal hemorrhage began to manifest themselves. It proved a very difficult matter to get the broken tube out. It was only accomplished finally by passing a tube of larger size over the broken tube within the abdomen.

Drying of the Intestines.—Dr. John A. Wyeth said that he thoroughly approves of Dr. Johnson's objections to evisceration. Exposure of the intestines to the cool outer air produces not only paralysis of the intestines, but shock. There should be less routine handling of the intestines during an abdominal operation than is the custom at present. With regard to purulent peritonitis, if it is of the extremely offensive variety, Dr. Wyeth considers that irrigation with hot salt solution gives the best hope. A good force of water up to eight or ten feet above the patient should be employed and the water should come

away clear before the flushing is stopped. It is very important after this to thoroughly dry out the peritoneal cavity. No trace of moisture should be left. Along and behind the ascending colon there may remain traces of septic material that the flushing has not taken out and these parts should be wiped thoroughly. For drainage Dr. Wyeth prefers a wick of gauze to a glass tube. A valuable point in septic peritonitis in women is to drain through Douglas' pouch.

Peritonitic Virulence.—Dr. Fessenden Otis said that the virulence of peritonitis differs very much in different cases. In a recent case he saw pus covering the whole of the peritoneum and a fatal ending seemed inevitable, yet practically no septic symptoms developed and the patient recovered. In appendiceal abscesses without odor there may be question of a broken-down gumma. This is important because specific treatment will do much to relieve after effects. In retroperitoneal abscesses in women it is well to bear in mind that they may be opened very satisfactorily through the vagina.

Normal Salines vs. Drying.—Dr. Wiener said that the question of saline irrigation or of dry sponging when purulent peritonitis exists is very important. Both methods have been tried at Mt. Sinai Hospital with excellent results. Every one admits that it is important to dry thoroughly. The question is, shall we irrigate beforehand? There are those who say that irrigation is unnecessary.

Prognosis.—The prognosis of a case with purulent peritonitis is not to be judged from the external appearances of the peritoneum, nor from the amount of pus, nor from its odor. The worst looking cases of peritonitis, in which there is a very fecal odor, are due to the bacillus coli communis, yet these cases have nearly always the best prognosis. The next best prognosis exists in cases due to staphylococci. Streptococci cases give the worst prognosis. A very mild looking peritonitis due to streptococci may prove rapidly fatal. Subphrenic abscess is always peritonitic in origin. The infection runs up along the lymphatics of the colon, but does not necessarily occur on the right side. Such abscesses to the left of the median line are not rare. In a recent case a perinephritic abscess from this cause occurred on the left.

Intravenous Salines.—Dr. Morris said that intravenous injection of physiological salt solution is of distinct benefit after purulent peritonitis. It raises blood pressure, dilutes toxins that are present in the circulation and causes their more rapid elimination. The intravenous injection may be repeated the next day if the symptoms continue severe. The most odoriferous cases of peritonitis are due to the colon bacillus. This micro-organism causes the formation of mercaptan, which has a vile odor. These stinking cases, however, have not as bad a prognosis as those due to the streptococcus, which may have very little odor. In general the odor enables us to distinguish between colon and streptococcus peritonitis. The color of the purulent exudate may be of some help in distinguishing staphylococcic peritonitis. One may with Clark trust to the peritoneum for its own drainage if we aid Nature by the presence of hygroscopic salts in the lumen of the bowel. With reference to drainage by means of gauze it must be remembered than even a healthy man does not stand gauze in his peritoneum well and that we must not subject weak men to its irritating presence any more than is absolutely necessary.

Cleansing Technic.—Dr. Johnson in closing the discussion said that patients who are submitted to abdominal operations should be subjected to as little violence as possible. The more irritated the peritoneum, the readier is the septic reaction and the more paresis and shock result. Cleansing of the intestines and of the peritoneal cavity is of extreme importance, but it must be done by gentle sopping and not by rubbing of the intestines. Drainage through the vagina is important. Vaginal drainage has given such excellent results to one good operator that he suggests rectal drainage for men whenever possible. It seems clear that the individual's resistance to infection is a much more important element in the prognosis of a case than the special variety of microbe that may be at work. Alcoholic and nephritic cases do very poorly. The very stout do not do well and besides there are mechanical difficulties in the way of drainage. The very lean are apt to be of low resistive vitality.

Abdominal Section.—Dr. Howard Collins said that as far as possible the incision for abdominal section should leave the abdominal wall intact for its functions. For this it is especially important not to interfere with the nerve-supply of the muscles that make up the abdominal wall. These nerves emerge from below the ribs, and traverse the tissues of the abdominal wall on the way to supply the different muscles. The lowest nerve emerges from the tip of the last rib and runs along a direct line, the prolongation of which would touch the spine of the pubis on the opposite side. The eleventh nerve comes from the eleventh rib and runs along a line that if prolonged would reach the middle of Poupart's ligament also on the opposite side. The tenth nerve emerges about one inch above the eleventh rib and runs in the same way toward the opposite iliac spine. The course of the ninth nerve is not so definite, but it is situated so high up in the abdominal wall that it is not as liable to be injured as are the others. It is important not to destroy more than one nerve-trunk. If muscles are split instead of being cut, nerves are usually not sectioned. When incisions are made high in the abdominal wall, as for gall-bladder operations, it is not so easy to avoid cutting these nerves, but the intra-abdominal pressure is much less in the upper abdomen and hernia is not liable to occur.

Clavicular Crutch.—Dr. Carter S. Cole of New York presented a splint for fractures of the clavicle. A pad for counter pressure fits over the

scapula behind and the pressure on the clavicle itself can be very well directed. While wearing the splint the patient's arm may be allowed to swing freely at the side. Dr. Cole has used this splint in a number of cases now in hospital practice and it has given very good satisfaction.

Large Intestinal Excision.—Dr. Manley presented a specimen of twenty-nine inches of gangrenous intestine which had been removed from a man suffering from strangulated hernia. The patient, a man of thirty, recovered and, though the operation was done four years ago, symptoms that point to any disturbance of intestinal function have not arisen. For excision of the intestines, Dr. Manley prefers a sloping section because this allows of much better circulation than if the section is made at right angles to the lumen of the intestine. When lateral anastomosis is indicated the opening should not be made in the raphe of the intestine, which is poorly supplied with blood, but midway between the raphe and the mesentery. Better than buttons and plates and bobbins for intestinal anastomosis is some form of suture—the Connell method preferably.

BOOK REVIEWS.

A Manual of Personal Hygiene. Edited by Walter L. Pyle, A.M., M.D., Assistant Surgeon to Wills' Eye Hospital, and having as contributors such well-known specialists as J. W. Courtney, M.D., G. H. Fox, M.D., E. Fletcher Ingals, M.D., Walter L. Pyle, M.D., B. A. Randall, M. D., G. M. Stewart, M. D. (Edin.), and Charles G. Stockton, M.D. 8vo., pp. 344. Illustrated. Philadelphia: W. B. Saunders & Co., 1900.

A physician's success in the treatment of a patient is oftentimes largely due to the attention which is shown to the personal comforts and hygiene of the sufferer. It is difficult to appreciate how much importance is usually attached to a physician's advice relative to the proper method of caring for the various organs and parts of the body in health and disease. A suitable answer to such questions, though always expected of the general practitioner, often necessitates considerable specialized knowledge. The above book has been interestingly written by a number of eminent specialists, but technical phraseology has been avoided, as far as possible, in order that the manual may be of value to all those who are desirous of "an exposition of proper living upon a physiological basis." The chapters upon eating, drinking, breathing, exercise, etc., are full of most valuable suggestions, and a careful perusal of this work would afford many a sufficient knowledge of prophylaxis to obviate the necessity of frequently summoning the family physician in those really unimportant cases which absorb so much of his energy and patience.

BOOKS RECEIVED.

Medical Diseases of Infancy and Childhood. By Dr. Dawson Williams. Second Edition Revised by Dr. F. P. Churchill. 8vo., 538 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York. $3.50.

Die Rolle der Schilddruese bei Stillstand und Hemmung des Wachstums und der Entwicklung und der chronische gutartige Hypothyreoidismus. Von Dr. E. Hertoghe. Deutsch von Dr. J. H. Spiegelberg. 8vo., 69 pages. Illustrated. J. F. Lehmann, Munich. 2 marks.

Die Begutachtung der Erwerbsfaehigkeit nach Unfallverletzungen des Sehorgans. Von Dr. E. Ammann. 8vo., 80 pages. J. F. Lehmann, Munich. 2 marks.

Pathology and Morbid Anatomy. By Dr. T. Henry Green. Ninth American Edition by Dr. W. Martin. 8vo., 584 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York. $3.25.

Laboratory Directions for Beginners of Bacteriology. By Dr. Veranus A. Moore. Second Edition. Demi 8vo., 140 pages. Illustrated. Ginn & Company, Boston. $1.05.

Forty-Fifth Annual Report Upon the Births, Marriages and Deaths in City of Providence, 1899. Dr. Charles V. Chapin, City Registrar.

Die Entwickelung der Biologie im 19 Jahrhundert. Dr. Oscar Hertwig. 8vo., 32 pages. Gustav Fischer, Jena. One mark.

Die Entwickelung der inneren Medizin mit Hygiene und Bakteriologie im 19 Jahrhundert. Dr. B. Naunyn. 8vo., 21 pages. Gustav Fischer, Jena. One mark.

Practical Gynecology. A Comprehensive Text-Book for Students and Physicians. By Dr. E. E. Montgomery. 8vo., 819 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia. $5.00.

Notes on the Mosquitoes of the United States. By L. O. Howard, Ph.D. 8vo., 70 pages. Illustrated. Washington, D. C.

A Book of Detachable Diet Lists. By Dr. J. B. Thomas. Second Edition. W. B. Saunders & Company, Philadelphia. $1.25.

A Text-Book of the Diseases of Women. By Dr. H. J. Garrigues. Third Edition. Revised. 8vo., 756 pages. Illustrated. W. B. Saunders & Company, Philadelphia. $4.50.

A Manual of Syphilis and the Venereal Diseases. By Dr. James N. Hyde and F. H. Montgomery. Second Edition. Revised and Enlarged. 8vo., 594 pages. Illustrated. W. B. Saunders & Company. Philadelphia. $4.00.

Rhinology, Laryngology and Otology and Their Significance in General Medicine. By Dr. E. P. Friedrich. Translated by Dr. F. H. Curtis. 8vo., 348 pages. Illustrated. W. B. Saunders & Company, Philadelphia and London. $2.50.

A Text-Book Upon the Pathogenic Bacteria for Students of Medicine and Physicians. By Dr. J. McFarland. Third Edition, Revised and Enlarged. 8vo., 621 pages. Illustrated. W. B. Saunders & Company, Philadelphia. $3.25.

Bacteriology and Surgical Technique for Nurses. By Emily M. A. Stoney. Demi 8vo., 190 pages. Illustrated. W. B. Saunders & Company, Philadelphia. $1.25.

Practical Manual of Diseases of Women and Uterine Therapeutics. By Dr. H. Macnaughton-Jones. Eighth Edition. 8vo., 947 pages. Illustrated. William Wood & Company, New York.

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ORIGINAL ARTICLES.

TREATMENT OF PUERPERAL ECLAMPSIA.

BY J. B. KILLEBREW, M.D.,
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THE causes of puerperal eclampsia are usually divided into the predisposing, the essential and the exciting. From a scientific point of view the study of all these is of interest, but from a practical standpoint the greatest interest is centered in the essential cause, because it is by preventing or removing this that the physician is able to prevent or cure the disease.

Numerous theories as to this essential cause of puerperal eclampsia have been advanced from time to time, practically all of which have now given way to that of toxemia. Just what this toxic agent is or where and how it is manufactured; whether it is produced by the normal processes of metabolism or is due to some condition existing only during pregnancy; or whether it is of bacterial origin has never been satisfactorily demonstrated. The general characteristics of the disease resemble so closely those of other diseases known to be produced by a condition of toxemia that this theory must be accepted until a better one is brought forward.

There seems to be some difference of opinion as to the part played by nephritis in the etiology of this disease, whether it is a cause of the disorder or only an effect. Undoubtedly it may be either or both. At all times, in health and in disease, there is produced in the organism, by the normal processes of metabolism, a certain amount of toxins. These toxins are eliminated by the excretory organs. So long as these organs are capable of eliminating the poisons as rapidly as they are manufactured there is no accumulation, hence no symptoms of toxemia. But just so soon as the amount generated becomes too great for the organs to eliminate accumulation takes place and symptoms of toxemia appear.

The kidneys are the most important excretory organs of the body. When they are diseased their capacity for work is diminished. Under ordinary conditions of life they may still be able, with the help of the other excretory organs, to eliminate all toxins from the system. But when pregnancy occurs the amount of toxins produced is increased. This increase may be so great that the united efforts of the excretory organs, with the most important of them—the kidneys—in a crippled condition, are incapable of eliminating them as rapidly as generated; as a result accumulation takes place and symptoms of toxemia occur. Even perfectly healthy organs are capable of doing only a certain amount. There is a limit to their capacity for work and when the amount of toxins produced is too great for them to eliminate there will be an accumulation and toxemia will supervene. Naturally a patient with nephritis is more liable to eclampsia than one with healthy organs; but there is no reason why a patient with healthy kidneys may not have eclampsia and no reason why one with diseased kidneys may not escape it. At the beginning of pregnancy a woman may have perfectly healthy kidneys; but, by reason of the increased amount of work thrown upon them to eliminate the increased amount of toxins produced and the long continued constant irritation produced in them by the egress of the toxins, they are liable to become inflamed and nephritis results. For the same reason an already existing nephritis may become aggravated. It seems clear, then, that nephritis may be either a cause or an effect of toxemia, or both, first being an effect and then a cause. It is no doubt a predisposing cause of eclampsia, but it is not an essential cause. In most cases of eclampsia the accumulation of the toxins is gradual, as is evidenced by the fact that the onset of the symptoms is gradual. There are usually pronounced precursory symptoms before the occurrence of convulsions. In some cases the toxemia is never great enough to produce convulsions, but only those symptoms indicative of a mild degree of poisoning. In some cases, the great minority, the accumulation seems to be rapid. The onset is then quite sudden and frequently without any of the precursory symptoms, the convulsions being the first symptoms observed.

As the phenomena characteristic of eclampsia are due to an excess of toxins in the system, which toxins are produced in the body, the most rational method of treatment would seem to be to arrest the formation of these bodies. But as it is not known what they are, where or how they are formed, our efforts along this line cannot be successful until such information is obtained. As these poisons are undoubtedly eliminated by the excretory organs the best practical treatment is that which will dilute the toxins circulating in the blood as much as possible and at the same time increase the activity of the excretory organs. The best agent for accomplishing this is normal salt solution. The method of employing it will depend upon the severity of the symptoms present.

A pregnant woman should be constantly under the observation of her attending physician especially after the sixth month. The urine should be examined frequently for albumin. If it is

found the utmost vigilance should be observed. She should be instructed to report at once the appearance of any of the premonitory symptoms of eclampsia, such as violent or continuous headache; any disturbance of vision, especially "flashes of light," dizziness, epigastric pain nausea and vomiting, marked mental irritability or muscular tremors. If any or all of these phenomena make their appearance, whether the urine contains albumin or not, it is a strong indication that toxemia is present and that convulsions are impending; therefore preventive treatment should be begun at once. The patient should live a quiet life, taking a moderate amount of exercise, but never enough to cause fatigue. All excitement should be avoided. The diet should consist of liquids, of which milk should form the principal part. Albuminous foods should be largely restricted. Large quantities of water should be drunk. The bowels should be kept open by the administration of a mild laxative. *Do not purge.* One large, loose movement each day is sufficient. The skin should be kept active by a daily warm bath, after which the patient should be wrapped in a blanket and put to bed where she should remain for an hour or two. If the pulse is hard and tense it may be softened by the administration of nitroglycerin. It also causes an increase in the amount of urine secreted.

While these measures are of undoubted value, they are secondary in importance to the use of normal salt solution, which as a prophylactic agent should be given as high enemata in quantities varying from 1 to 3 pints once or twice in every twenty-four hours. The quantity given should be just as much as the patient can retain. These enemata are absorbed by the mucous membrane of the colon, enter the circulation, dilute the blood, diluting the toxins contained therein. They also stimulate the kidneys and skin to greater activity, thereby causing an increase in the elimination of the toxins. By a conscientious employment of these measures many patients showing evidence of approaching convulsions can be successfully carried through gestation to full term and delivered of a living child without the appearance of convulsions.

If, in spite of these prophylactic measures, the symptoms grow progressively more severe and convulsions occur, or if the patient is having convulsions when first seen, more active measures must be taken. The convulsions should be controlled with inhalations of chloroform. One of the superficial veins at the elbow should be exposed and opened. The dark toxin-laden blood must be allowed to flow from the distal end of the divided vein while normal salt solution at the temperature of about 100° F. is injected into the proximal end. The amount of blood withdrawn will vary with each individual, as will also the amount of normal salt solution injected. Ordinarily from 12 to 24 ounces of blood should be withdrawn and from two to three times that amount of salt solution injected.

The question will arise as to whether bleeding should be practised in all cases. I would say that all patients except those who are extremely anemic should be bled. The withdrawal of a portion of the blood from almost any of these patients will act beneficially if some other circulating fluid is introduced to remedy the loss. Unless this fluid is introduced to take the place of the blood withdrawn, undoubtedly it would be better to bleed only those patients who are very plethoric. In the very anemic it is better to introduce the normal salt solution without bleeding. The withdrawal of blood from these patients certainly removes some of the toxins from the system and makes room in the blood-vessels for the salt solution that is to be introduced. This salt solution dilutes the remaining blood and consequently the toxins contained therein. It acts as a circulating medium and stimulates the excretory organs.

In most of the cases of eclampsia that have been treated by the use of normal salt solution it has been administered either by hypodermoclysis or by enteroclysis. The latter method is entirely too slow to be depended on after the convulsions have begun. Intravenous injection is preferable to hypodermoclysis, because it is more certain and more rapid and is not more dangerous. If the patient is edematous and the circulation sluggish, the salt solution introduced beneath the skin will probably never be taken up by the lymphatics. There is practically no danger in introducing the solution directly into the vein and the results are certain and rapid.

The uterus should be emptied immediately. If the cervix is not fully dilated or nearly so, it must be manually dilated if possible. If this is impossible on account of rigidity, recourse must be had to incisions as advised by Dührsen, which is not now the formidable operation it was before the technic of vaginal work was perfected.

The order in which these means should be employed is as they have been given: (1) Control convulsions with chloroform; (2) bleed the patient and give intravenous injection of normal salt solution; (3) empty the uterus.

Perhaps most operators empty the uterus before giving the infusion of normal salt solution. It frequently requires as much as two hours or even more to empty the uterus, while the infusion or normal salt solution can be given in a few minutes. In some cases the toxemia is so profound when the patient is seen that she will be dead by the time the uterus can be emptied. In these cases there is an almost complete absence of activity on the part of the excretory organs. It seems to me that it is better to give the intravenous infusion of salt solution first and allow it to be doing its work while the uterus is being emptied. I saw a patient a few months ago who died within four hours after the first convulsion. The physician in charge reached her two hours after they began. He first emptied the uterus. When this was accomplished life was almost extinct. Preparations were made at once to give

an infusion of salt solution, but the patient died before the vein could be found.

I recall another instance where the patient had seventeen convulsions during a few hours. The surgeon in charge at once gave an intravenous infusion of normal salt solution. No other treatment was given. The patient did not have another convulsion and was perfectly conscious in a few hours. The uterus was emptied the next day. If the physician in charge of the first patient had given the infusion before he emptied the uterus the result might have been different. If there are enough assistants at hand both operations can go on at the same time with great advantage to the patient's condition.

After these measures have been taken the colon should be thoroughly irrigated. If the convulsions recur and are mild they should be controlled with chloral given in an enema. Should they again become severe another infusion of normal salt solution should be given. This will rarely be necessary. During convalescence the patient should be confined to bed and the bowels and other excretory organs kept active. The diet should be restricted to liquids for a week and then gradually increased as the physician thinks best. A high saline enema should be given twice daily. All excitement, worry and depressing influences are to be avoided. Callers should not be allowed and the nurse should make special efforts to keep the patient in a buoyant frame of mind.

Veratrum viride and chloral have given good results in the practice of many physicians. I have not had any experience with the former. The latter will control the convulsions in many cases, but it does so more by diminishing the excitability of the nerve centers than by removing the causes of the convulsions, although it probably causes some increase in the secretion of urine. Practically the same may be said of veratrum viride. Pilocarpin is dangerous because of the marked depression on the heart and its use is never justified in this disease. Morphine undoubtedly has some temporary effect upon the convulsions, but it should never be used. Like chloral, it unquestionably has a quieting action on the nerve centers, but its effects on the various secretions are important and not to be underestimated. Instead of assisting in the removal of the causes of the convulsions, it retards it by paralyzing all the excretory organs with the possible exception of the skin.

That all methods of treatment heretofore applied in this disease have been unsatisfactory is evinced by the fact that the mortality has been about 25 per cent. Certainly this is sufficient evidence to show that there is room for improvement. Statistics based on the method of treatment given in this article are not large enough to form a very correct idea as to its efficiency, but it is a rational, common-sense method of procedure and offers a hope of better results in the future, especially when improvements in technic have been thoroughly worked out.

OBSERVATIONS UPON THE QUARTAN MALARIAL PARASITE AND UPON THE STAINING REACTIONS OF THE TERTIAN, QUARTAN AND ESTIVO-AUTUMNAL PARASITES.

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The occurrence of several cases of quartan malarial fever at the United States General Hospital at San Francisco in soldiers returning from the Philippines has given the author an opportunity of studying with care this comparatively rare organism, and the facts observed are embodied in this paper.

Quartan malaria is the most rare form of malarial infection. Of nearly two thousand cases of malaria, the records of which have been preserved and in which the malarial parasites were present in the blood, only twelve quartan infections were noted. On account of its rarity the quartan parasite merits a careful study, and the fact that it can be easily recognized should be insisted upon, as such recognition will often clear up an obscure case of fever and lead to more correct statistics as to the occurrence of the disease.

The quartan malarial parasite is as distinctive in its morphology as is the tertian or estivo-autumnal parasite. Its cycle of development, as is well known, occupies seventy-two hours. The first form of the organism seen in the blood is a small hyaline disc, very minute and actively ameboid. Although these bodies are generally believed to be indistinguishable from similar tertian parasites, I believe that the quartan hyaline body is more sharply cut and refractive than the tertian, while the invaded corpuscle is of a more greenish hue. In a few hours these small hyaline organisms have grown larger, are less actively ameboid and a few granules of dark brown pigment may be seen within them, generally at the border of the organism. The shape of the organism is either round or triangular, the ameboid motion being very sluggish. The pigment is motionless. I have never seen a pigmented organism which was actively ameboid. The organism is sharply outlined and refractive, while the invaded corpuscle is greenish in color and not swollen. Even at the early stage I believe it is possible to distinguish this form from the tertian parasite, which is dim of outline, of irregular bizarre shape, with active pigment and inhabiting a pale, swollen corpuscle.

In twenty-four hours the distinguishing features of the quartan parasites are fully developed. The organism is sharply cut and looks often as though it were stamped into the blood corpuscle; it is refractive, and its protoplasm often presents a peculiar, finely granular appearance; the pigment is dark brown in color, in the form of rather coarse granules and is generally collected around the edge of the organ-

ism, sometimes forming an almost complete wreath around it; the pigment is absolutely motionless. The shape of the organism at this stage of development is usually triangular, ovoid or round, and it is not ameboid. The invaded corpuscle is smaller than the healthy ones and is of a darker green color. All these characteristics clearly distinguish the quartan from the tertian parasite, which is less sharply cut, and refractive, is more or less ameboid, very irregular in outline, possessing lighter brown, more finely granular pigment, which is always motile, while the infected corpuscle is pale and often greatly swollen.

At the end of thirty-six hours all the phenomena noted are more pronounced, the organism filling about two-thirds of the corpuscle, which seems to be retracting about it; the pigment is increased in amount, but is motionless and collected in rough masses at the border of

1, Normal red blood corpuscle; 2 and 3, hyaline quartan parasites; 4 to 12, various stages in the growth of the pigmented quartan parasite; 13, full-grown quartan parasite; 14, 15 and 16, presegmenting forms of the quartan parasite; 17, segmenting quartan parasite inside red corpuscle; 18, segmenting quartan parasite, the so-called "marguerite form"; 19, segmenting quartan parasite; 20, flagellate quartan parasite; 21, large extracellular quartan parasite; 22, fragmenting quartan parasite; 23, vacuolated quartan parasite.

the organism which is not ameboid. The growth of the organism from this time on is very slow, and it is not until a few hours before segmentation that the full-grown bodies are observed. Such an organism is circular in shape, bordered by a thin greenish layer representing the remains of the infected corpuscle; with numerous clumps of dark brown motionless pigment, not now entirely confined to the periphery of the organism, but scattered through it, the protoplasm of the organism being finely granular in appearance. In many instances segmentation was seen to take place even before the corpuscle was entirely destroyed, the pigment collecting toward the center of the organism and six or more segments appearing within the corpuscle. Most commonly, however, the pigment, in the full-grown parasites collects at the center in a solid, almost black mass, and about the same time all trace of the infected corpuscle disappears, the organism being apparently extracellular. In a short time radial striations are observed shooting out from the central pigment, and these, joining at their extremities, form from six to fourteen oval segments; as a rule, the number of segments does not exceed ten. They are arranged regularly, at first, around the central pigment, the so-called "marguerite forms," but soon they begin to separate and disappear, the pigment at the same time disintegrating and becoming diffused. The number and the beautifully regular arrangement of the segments would alone serve to distinguish this stage of the quartan from the corresponding tertian parasite, but the quartan segments are also more oval in shape, more refractile and somewhat larger. The star-like arrangement of the pigment between the segments, which Thayer considers so characteristic, is generally observed, but I have seen exactly the same arrangement of pigment in tertian segmenting forms; it is probably simply an accidental occurrence, doubtless more common in the quartan parasite, but not at all peculiar to it.

Differentiation from the Tertian Malarial Parasite.—The pigment in the quartan organism is only motile in the very young forms, is always dark brown in color and occurs in round granules or in irregular masses of such granules. It generally occupies the periphery of the organism and tends to become collected at one portion, but in the full-grown parasites the granules and blocks of pigment are scattered throughout the protoplasm.

The outline of the quartan parasite, especially after the first twenty-four hours, is always very sharply cut and appears as though stamped into the corpuscle; the shape of the organism is either round, oval or triangular, and only in the very early hours of its development does it send out ameboid processes of any size; later the ameboid movement consists of a gentle sluggish undulation of the periphery of the organism and even this ceases after the first thirty-six hours.

The protoplasm is refractive and often, on close inspection with a good light and high power, the peculiar, finely granular appearance which has been mentioned is noted. This, together with the sharply cut outline and blocks of pigment, brings to mind very forcibly the similar appearance of the ovoid bodies and crescents of the estivo-autumnal parasite. Indeed, the organism during every stage of its development resembles much more closely the tertian estivo-autumnal parasite as it occurs in splenic blood than it does the ordinary tertian organism. The corpuscles which are invaded by the quartan parasite are invariably somewhat shrunken and greener in color than the healthy corpuscles, but are not often crenated.

From this résumé of the characteristic features of the quartan parasite as it has been observed here, it will be seen that it can easily be distinguished from the ordinary tertian parasite by its cycle of development covering about seventy-two hours, by its smaller size, sharply

cut, more regular outline, refractive, finely granular protoplasm, motionless, darker brown pigment, collected peripherally, lack of or very sluggish ameboid motion, small number of segments which are more refractive and oval in outline.

Staining Reactions of the Tertian, Quartan, and Estivo-Autumnal Malarial Parasites.—The following observations upon the staining reactions of the malarial parasites are the results of study of hundreds of stained specimens, and the methods advocated may be depended upon when stained specimens of blood are desired.

There are many ways of staining the parasites of malarial fever, but a description of a few of the most useful is all that will be attempted at this time. The blood-smears are prepared by carefully cleaning the lobe of the ear, puncturing it with a sterile needle or lancet, touching a clean cover-glass to the resulting drop of blood, and placing another cover-glass over it: the two are then slid very gently and carefully apart and the smear allowed to dry. Care should be taken not to get too much blood upon the first cover-glass and to use no pressure in sliding the glasses apart. After drying, the smears are allowed to harden in equal parts of alcohol and ether for half an hour, when they are ready to stain. The plasmodia are stained by nearly all basic aniline dyes, but not by the acid dyes. For staining I use either Romanowsky's or Chenzinsky's method, preferably the latter. Romanowsky's method is as follows: Two solutions are used—No. 1, a saturated aqueous solution of methylene blue; No. 2, a one-per-cent. watery solution of eosin.—The methylene-blue solution should be at least one week old. The staining solution is made fresh each time it is used and consists of one part of the filtered methylene-blue solution added to two parts of the eosin solution and thoroughly mixed. The smears are placed face down upon this solution and allowed to stain for from one-half to three hours or more. The best results are obtained after about two and a half hours' staining. By this method the colored corpuscles are stained red by the eosin and the parasites a deep blue by the methylene blue. Romanowsky believed that the nuclear chromatin stained a violet color, but I have never been able to confirm his observations. Although very beautiful stained specimens can be secured by this method, I much prefer the method of Chenzinsky, for the reason that it gives a more natural appearance. By Romanowsky's method, and in fact, by most methods, the coloring is very vivid, especially that of the red corpuscles by eosin, whereas in Chenzinsky's method the red corpuscles are stained more dimly, appearing almost natural in color, while the parasites are stained a fine blue, fully as well as by any other method.

Chenzinsky's method is as follows: A concentrated watery methylene-blue solution, diluted one-half with water, is added to an equal amount of a one-half-per-cent. solution of eosin in sixty-per-cent. alcohol. This solution is bottled and kept and is improved in staining qualities by age. The specimens are stained with this solution for five minutes and then washed in water, dried and mounted in Canada balsam. Much better specimens are obtained by staining for two hours or more, and I have secured very fine ones by leaving the smears in the staining solution over night. There are numerous other methods of staining the malarial parasites, but these are the most satisfactory and useful.

A word as to the use of stained preparations for diagnostic purposes: I am aware that a few authorities use stained preparations almost entirely for diagnosis, but I believe that it is a cumbersome and very unreliable practice. Where it is impossible to keep a specimen of blood fresh enough to look at under the microscope, the use of stained preparations is, of course, necessary; but when it is possible to examine the blood fresh, it is always to be preferred, as it is infinitely more exact and satisfactory. I have seen many cases in which the fresh blood showed numerous ring-forms of the estivo-autumnal parasites, yet in which smears taken at the same time and stained most carefully showed either none or at most a very few dimly colored parasites. There is also the danger of mistaking stained granular matter or debris lying upon the corpuscles for the small estivo-autumnal parasites in the smears, and this mistake can be very easily made by one who is unaccustomed to examining such preparations. The only strictly scientific way of diagnosing the various forms of the malarial parasites is by the microscopical examination of the fresh blood, and after all most specimens of blood will keep in a suitable condition for examination, under ordinary circumstances, for six, eight, or even a greater number of hours, despite the text-book statements to the contrary.

Before considering the staining reactions of the plasmodia a brief note as to the most recent staining method devised by Futcher. It is to be recommended whenever speed is desirable in staining or when the fresh blood cannot be examined and a speedy diagnosis is essential. It is as follows: The smears are hardened in a one-per-cent. solution of formalin in ninety-per-cent. alcohol for from a half to one minute. They are then dried and stained for twenty to thirty seconds in the following solution of thionin, known as Marchand's: Saturated solution of thionin in fifty-per-cent. alcohol, 20; two-per-cent. solution of carbolic acid, 100. The solution should stand several days before using. After staining, the specimen is washed in water, dried, and mounted in Canada balsam. The red corpuscles are stained a very slight greenish hue, while the parasites are deep violet in color. Care should be used not to stain for too long a time, and also not to allow the formalin solution to act long, as it seems to cause a degeneration and vacuoliza-

tion of the red cells. The method stains the estivo-autumnal rings very satisfactorily.

Staining Reactions of the Tertian and Quartan Malarial Parasites.—In properly stained preparations of the tertian and quartan parasites two distinct portions can be made out—a deeply staining ectoplasm and a dimly staining endoplasm. The endoplasm is really the nucleus of the parasite, and sometimes there can be seen, situated eccentrically, between the ecto- and endoplasm, a very deeply stained spot, the nucleolus, and this contains the greater part of the chromatin substance. These appearances are best observed in half-grown parasites which are not undergoing marked ameboid change of form. The ectoplasm contains the pigment. The nucleus is generally round or oval in shape and eccentric in situation. The very youngest tertian and quartan parasite is represented by a blue ring, the center of which is almost colorless. At some portion of the junction of the central colorless area and the blue-stained ring may often be seen a deeply stained dark blue dot. Here we have the clearly differentiated ectoplasm, stained blue, the endoplasm or nucleus, almost unstained, and the deeply stained nucleolus. As the organisms grow, pigment granules appear in the ectoplasm or stained portion, and by reason of the change of shape due to the ameboid motion the central colorless nucleus is not easily made out, it being often situated in one of the pseudopodia. By reason of the ameboid changes in the shape of the parasite and the situation of the pseudopodia at different levels in the infected corpuscle, it often appears as though there were two or more stained parasites within one corpuscle. In the stained ectoplasm both deeply and dimly stained areas can be distinguished. These occur without any regularity and are probably due to different quantities of the stained protoplasmic substance collected at certain places. It will often be noticed that the extremities of the pseudopodia are stained much more deeply than other portions of the parasite. Very seldom is any pigment seen within the clear, almost unstained nucleus. Often, however, young forms are seen which stain almost uniformly throughout, no trace of a nucleus being visible.

As the parasites grow larger and approach full development, the distinction between the ectoplasm and the nucleus is gradually lost and is often represented simply by a more or less irregular, dimly stained area free from pigment. Often, even this appearance is absent and the parasite consists of a pretty uniformly stained pigmented mass of protoplasm. The small, deeply stained spot or nucleus always disappears before the parasite attains its full growth and is by no means constant even in the young forms. Just before segmentation, when the pigment has collected in a clump, the stained tertian or quartan parasite presents a peculiar, dotted or mottled appearance, due to small, very deeply stained dots or spots scattered through the more deeply stained protoplasm of the parasite. As segmentation advances and the parasite begins to split up, it will be seen that these darkly staining dots are in reality the nucleoli of small dimly stained rings or young tertian or quartan parasites and correspond exactly to the young stained forms first described.

The pigment does not stain appreciably in well prepared specimens, and the parasite which shows the centrally situated clear, very dimly staining area or nucleus, is always collected within the stained ectoplasm. This agrees well with the well-known fact that in the fresh specimen the pigment granules are almost always collected at or near the periphery of the organism in its young pigmented stage.

Staining Reactions of the Estivo-Autumnal Malarial Parasites.—The staining reactions are similar for both the quotidian and tertian estivo-autumnal parasites.

The "ring-forms" of the estivo-autumnal parasite show a more or less deeply stained outer position, a round, or oval unstained central position, and a very deeply staining minute dot, situated at some point at the periphery of the stained ring. As the parasites grow, the endoplasm stains faintly, and the distinction between it and the ectoplasm becomes less marked. The deeply staining dot disappears, and just before segmentation the parasites stain a uniform blue throughout. The pigment granules, if present, are collected in the stained outer portion in the half-grown parasites and at or near the center just before segmentation. The individual segments stain as do the intracorpuscular rings, the only difference being that they are smaller.

Staining Reactions of the Crescents and Ovoids.—The crescent form of the estivo-autumnal parasites presents many interesting staining phenomena. In those crescents in which the pigment is collected near the center, the organism as a whole takes a rather dim blue color, the poles staining much more deeply, while the center in which the pigment lies is often unstained or but dimly stained. At each pole, as a rule, may be seen a very deeply stained semilunar portion, extending to its periphery and covering the horns of the crescent. The appearance presented is that which would result had each horn of the crescent been dipped into a darker staining fluid and withdrawn. Between the deeply stained horns of the crescent and lying within the more dimly stained protoplasm are often seen very deeply stained round or oval spots, irregularly distributed. In some crescents these deeply stained spots are very distinct and occupy a large part of the protoplasm of the crescent. As a rule, the area in which the pigment lies and that immediately surrounding it stain very faintly, or not at all, but it is not rare to see a darkly stained belt or band passing through the center of the crescent and seeming to divide it into two parts. This appearance,

however, is not common and does not by any means prove the dual nature of the crescent. Surrounding the crescent, in the majority of instances, is a narrow eosin-stained border, believed to be the remains of the red corpuscle in which the crescent was developed. This red-stained border does not always, however, entirely surround the crescent; sometimes it is observed only between the two horns, forming the so-called bib; sometimes it is absent there and present over the convex portion of the crescent; sometimes it can only be seen covering the horns or one horn of the crescent. It is often observed to be broken or ragged in outline and interrupted in places, thus suggesting the gradual disintegration of the red cell. Crescents are often observed which do not show any eosin-stained border, and in such cases we may assume that the destruction of the red cell is complete and the crescent is free in the blood plasma.

While the above description applies to the majority of stained crescents, many exceptions occur. Quite often, crescents are observed stained almost uniformly throughout; others do not present the deeply stained spots or polar staining; others stain very dimly at one pole and deeply at the other; in fact, it would be almost impossible to describe all the variations which may occur, but in the vast majority of examinations of stained crescents the description given will be found correct. There is no evidence of a nucleus in crescents. The ovoid bodies stain exactly as do the crescents, so far as I have been able to observe, save that the polar staining is not so pronounced.

In closing this article the author wishes to express his thanks to Col. A. C. Girard, the commanding officer of the Hospital, for his interest and enthusiasm in the study of tropical diseases and for the uniform encouragement which he has invariably given him in his work.

IS LIVING ANIMAL TISSUE CAPABLE OF NEUTRALIZING THE EFFECTS OF STRYCHNINE AND VENOM? AN EXPERIMENTAL STUDY.[1]

By S. J. MELTZER, M.D., and G. LANGMANN, M.D., of New York.

In an article entitled "A Contribution to the Knowledge of the Neutralization of Poison" (*Ein Beitrag zur Lehre von der Entgiftung*) Drs. v. Czyhlarz and Donath, of Nothnagel's Clinic in Vienna, have recently published in the *Centralblatt für innere Medizin* (No. 19, 1900) a communication which attracted considerable attention. They have tightly constricted a posterior extremity of guinea-pigs and injected effective doses of strychnine in its distal end, and found that when the ligature was removed after an hour or later, the characteristic effects of strychnine were not produced. The authors interpret their observation by the strained assumption that by the prolonged intimate contact of the tissue with the poison the latter becomes "fixed" or neutralized. They refer also to the use of ligature in cases of snake-poisoning and suggest that the favorable effect of this therapeutic procedure might be due chiefly to the fixing of the venom by the animal tissues.

The fixing or binding of toxins by the cells or fluids of the animal body is now quite a familiar idea, its far-reaching extension to all kinds of vegetable and animal poisons should, however, certainly not be accepted without conclusive proofs.

The statement made in Weir Mitchell's older writings, that a patient died from a snake-bite two hours after removal of the ligature which had been tightly applied for sixteen hours, was the incentive for us to test, at first on venom, the assumption made by v. Czyhlarz and Donath. However, the results which we obtained in these experiments induced us to repeat the experiments of the above-mentioned authors with strychnine. We are going to report here briefly the findings of these experiments with a short discussion of their proper interpretation.

Experiments with Venom.—We have injected the venom of the rattlesnake (*Crotalus horridus*) into one of the posterior extremities of rabbits and guinea-pigs. Death is here the only sure sign of the poisonous effect. All other symptoms are not sufficiently definite to be used in experimental comparisons. We have therefore in our experiments measured the effect of the poison chiefly by the time which elapsed between injection and death. The fatal dose was established every time by a control-experiment, although we knew from former experience that a dose of 0.03 gram of fresh poison generally kills a rabbit in from three to four hours. Guinea-pigs require a dose three to four times as large as that which is fatal for the rabbit.

Our experiments permit the conclusion that temporary ligation of the leg in which, peripheral to the constriction, a fatal dose of venom was injected as a rule retards the fatal outcome by four to ten hours. In some cases life was prolonged for one day and exceptionally even for a few days. The longer the leg remained ligated the longer was death deferred and the more severe were the local reactions, such as hemorrhagic edema, abscesses, gangrene, etc. When the leg was constricted for a few hours and the venom injected soon after removal of the ligature, the fatal outcome was also considerably postponed.

We can say that our experiments with snake-poison indicate in a general way that venom does not become neutralized by animal tissue, but that a ligature retards its resorption into the circulation on account of the impairment of the absorbing capacity of the tissues of the leg caused by the prolonged constriction.

It must, however, be admitted that the general question whether poison becomes neutralized by

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living tissue cannot be properly decided by experiments with venom. It could be claimed, in the first place, that in this case the poison is not sufficiently fixed by the tissue, because the latter loses a great deal of its vitality immediately on coming in contact with the venom; a supposition which seems, indeed, to be sustained by the appearance of local inflammatory reactions soon after the injection of this poison. Furthermore, it could even be assumed that the venom does become neutralized, but death results finally not from the venom but from the resorption of toxic products from the greatly disintegrated tissues of the leg; an assumption which seems to hold good for some late deaths occurring after snake-poisoning.

Experiments with Strychnine.—The facts contained in the communication of v. Czyhlarz and Donath regarding the influence of the ligature upon strychnine-poisoning would greatly gain in importance if it would hold good for all or, at least, many animals and when even comparatively large doses of strychnine are employed. The wording of the statement made by these authors seems to imply such an anticipation, although they have apparently experimented only with guinea-pigs, an animal not very sensitive to the effects of strychnine, and have not even stated what doses they employed in their experiments. In our experiments we have employed, in addition to guinea-pigs, rabbits and frogs. The last are very sensitive to strychnine. Smaller doses could be employed on them, thus offering the tissue a still better chance for complete neutralization of an effective dose. Besides, the hind leg of a rabbit is many times the size of that of a guinea-pig and has at its disposal much more tissue and therefore readier means to conquer a poisonous dose of strychnine. In some cases we have also employed massage in order to bring the poison in intimate contact with a wide area of the tissue of the constricted extremity. In all our experiments we employed sulphate of strychnine in one-per-cent. solution.

Experiments on Frogs.—When the dose of strychnine injected into a posterior extremity of these animals amounted to 0.0002 gram the ligature had apparently no influence at all on the poisonous effect. With a dose of only 0.0001 gram the tetanus appeared eight to ten minutes later than in the normal frog used for control, and was also less violent and of shorter duration. Doses smaller than 0.0001 gram had no reliable characteristic effect even in normal unligated frogs. Briefly stated, the results were: The ligature had no influence at all upon doses above the minimum; the effect of a minimum dose of strychnine was retarded a little but never abolished.

Experiments on Rabbits.—In the experiments on these animals the negative results were still more pronounced. Doses of strychnine amounting to 0.001 gram pro kilo rabbit produce in an animal whose leg was previously constricted a tetanus of the same intensity and after the same lapse of time as in a normal animal used for control. Doses less than 0.001 gram pro kilo do not have uniform characteristic results in control-animals either. Even a simple retarding effect of the ligature has not been established.

The experiments on frogs and rabbits have shown pretty conclusively that the tissues of these animals at least do not neutralize any dose of strychnine, or, at least, that such a neutralization is not demonstrated by the method of investigation employed by us in repetition of the experiments of v. Czyhlarz and Donath.

Our experiments, however, cannot be considered as a contradiction to the statements of the above-mentioned authors, inasmuch as they have derived their observations from a study upon guinea-pigs whose tissues perhaps possess the special property of neutralizing strychnine. We might even go so far as to assume that the well-known greater resistance of guinea-pigs to the effects of strychnine might be due just to this special capacity of the tissue of guinea-pigs to fix certain amounts of strychnine. To get more light on this interesting question we have carried out a series of experiments on guinea-pigs, studying the effect of the ligature under different conditions and varying doses of strychnine.

Experiments on Guinea-Pigs.—Doses of 0.001 gram do not produce characteristic effects in animals weighing 250 grams, the average weight of a guinea-pig. A dose of 0.002 gram brings out in a normal animal a characteristic tetanus in a few minutes, but upon such a dose the ligature has no perceptible influence; the tetanus appears with the same intensity and at the same time in a constricted animal as in an animal without previous ligation. However, the effective minimum dose lies between the two mentioned doses; it is 0.0015 gram; and with this dose we have repeatedly established the fact that in an animal whose leg was temporarily constricted, in the great majority of the experiments, the strychnine brought out no characteristic effects, and even in the few exceptions the tetanic outbreak was of a very mild nature; while in the control-animal a similar dose had the characteristic effect. We can thus say that we have confirmed the statement of v. Czyhlarz and Donath as far as the point of fact is concerned, namely, that a ligature is capable of annihilating the effect of strychnine, but with the restricting modification that this statement applies only to guinea-pigs and to minimum effective doses. We may also express the results correctly by saying that the ligature reduces an effective minimum dose to an ineffective subminimum.

But does this mean that in these cases the entire dose of strychnine remains in the leg and none becomes absorbed into the circulation? To throw light on this question we made the following two kinds of experiments. First, in such ligated guinea-pigs in which after removal of the ligature the injection of 0.0015 gram remained without effect, we soon injected into another part of the body 0.001 gram, *i. e.*, a sub-

minimum dose which would otherwise have had no effect, and this injection brought out in a few minutes characteristic convulsions. That means that from the ligated leg enough strychnine was absorbed to increase the newly-injected subminimum to an effective minimum dose. This amounts to an absorption from the leg of at least 0.0005 gram, about one-third of the injected dose.

In a second series both posterior extremities were simultaneously ligated and in each 0.0015 gram of strychnine was injected. In these cases a well-characterized tetanus appeared on removal of both ligatures. In these cases it appears that at least one-half of the injected quantities were absorbed from the legs. Moreover, the mere fact that the ligature does not have any influence upon doses of 0.002 gram seems to demonstrate that of this quantity at least 0.0015 gram becomes absorbed, which amounts to about three-quarters of the injected dose.

The positive result regarding the influence of the ligature is accordingly reduced to the modest fact that in guinea-pigs, which are less sensitive to the effects of strychnine, a ligature reduces the absorption of the injected dose of strychnine by a small fraction, a reduction sufficient to turn an efficient minimum dose into a subminimum. Is it necessary to assume that this small fraction was *fixed* by the tissues of the leg and by this and this alone was prevented from being absorbed into the circulation? And is such an assumption even probable? A leg which was subjected to a long, firm constriction certainly contains as a result many changes which are capable of affecting its power of absorption, whether this latter be accomplished by physical or cellular forces, and whether it takes place by the blood-vessels or by way of the lymphatics. The constriction causes a destruction or at least an impairment of the vitality of some of the tissues; it causes the occlusion by thrombi of many blood-capillaries, and it probably causes in some of the lymph-spaces a conglutination and in others obstruction by lymph-clots, etc. Under these circumstances, is not a diminution in the absorption in the injected doses to be expected, simply as a consequence of the impaired power of absorption within the tissues of the ligated leg? And now if, in addition to the factor of impaired absorption, the tissue would bind some portion of the injected strychnine, would not the portion of strychnine which is not becoming absorbed be considerably larger than that fraction which we find missing in reality?

We have, however, endeavored to clear up this point by an experimental arrangement. If the supposition is correct that animal tissue can neutralize a certain amount of poison, we might expect that the neutralization will be in direct proportion to the amount of tissue and in inverse proportion to the amount of poison which comes into play. We therefore constricted simultaneously three extremities of a guinea-pig and in each of the extremities injected simultaneously an equal amount of strychnine which we varied in different animals. By this arrangement the strychnine comes in contact with a larger amount of tissue than in the original experiment, and we ought to have found that larger doses of strychnine prove to be ineffective. We obtained, however, just an opposite result. Even when only 0.0005 gram was injected in each extremity, the sum total of which for one animal was just 0.0015 gram, a violent tetanus set in on removal of all the three ligatures. A dose of 0.0015 gram injected in one constricted extremity becomes ineffective, the same dose divided among three extremities, *i. e.*, three times as much tissue, proves to be very effective. The conclusion therefore is unavoidable that the tissue does not interfere with the effect of the strychnine. Apparently the success in our last experiment is due to the fact that the number of unimpaired paths of absorption is greater in the three constricted extremities than in one.

Von Czyhlarz and Donath, however, state that they have performed experiments which demonstrate that the absorption within the ligated leg is not impaired. They have kept a leg constricted for a few hours and shortly before removing the bandage have injected strychnine, the animals, they state briefly, succumbed in a few minutes under characteristic convulsions. Such a general statement proves in a general way that absorption can take place even from a ligated leg. This could be satisfactory to the authors who apparently assumed that when the injection was made just before the constriction none of the strychnine became absorbed, which could then be due only to some other factor than impaired absorption. We have shown that by far the greater part of the injected strychnine becomes absorbed even with a prolonged constriction. To prove that the retained small fraction was not due to some degree of impairment of the absorption power in the constricted leg, it would only be necessary to show that the absorption did not suffer at all, *i. e.*, it would require a comparison of the power of absorption from such a leg with that of a normal non-ligated leg; minimum doses would have to be used and the intensity and duration of the convulsions noted, etc. All this the authors have not done, they do not speak of comparison experiments and do not even tell us what doses they employed in these experiments. We may then safely say that they have not proven and not even attempted to prove that by prolonged constriction the power of absorption does not suffer to any small degree which would suffice to turn the absorption of an effective minimum dose into an ineffective subminimum dose. It would be very strange indeed if a constriction lasting from three to four hours, which often enough causes visible changes in the extremity, would not alter in the least the power of absorption of such a limb.

We have, however, again tested this point by direct experiments with the following results: When a leg was kept constricted for from one

and a half to two hours and immediately on removal of the constriction 0.0015 gram, *i. e.*, an effective minimum dose, of strychnine was injected into it, the effect of the strychnine was visibly modified; the convulsions appeared later than usual, did not last long and were altogether of a mild type, distinctly milder than in the control-animal. The strychnine effect was less marked the more distant from the place of constriction the injection was made, especially when it is made toward the distal end. On the other hand, if the injection was made near the place of constriction and in a centripetal direction the effect was sometimes very little different from that observed in a control-animal.

Our results can be briefly summarized as follows: Constriction of an extremity of an animal, even after removal of the constriction, markedly retards the fatal outcome of snake-poisoning and transforms an effective minimum dose of strychnine into an ineffective submiminum dose. This effect is apparently due to some impairment of the power of absorption within the constricted leg. It seems quite certain that no part of either poison becomes fixed or neutralized by the tissues of the animals experimented upon. The claim of v. Czyhlarz and Donath to that effect could not be sustained.

EYE-WORK IN GENERAL PRACTICE.

By S. W. S. TOMS, M.D.,
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In the early years of my professional work I met a class of patients presenting conditions of a nervous type of deranged functions difficult to understand and refractory to treatment. The obscurity of the exciting causes made diagnoses speculative because of the variety of symptoms in different individuals. After seeing a large number of such cases I felt there probably was a latent causation common to the entire class.

The symptom-complex comprised anorexia, nausea and sometimes vomiting; an obstinate neuralgia, generally affecting some of the cranial nerves; vertigo or agarophobia, alternating perhaps with an irregular headache; in others gastrointestinal indigestion, sour stomach or gaseous dyspepsia. These anomalous conditions, purely functional, could not be accounted for by organic disease, and rational measures of therapeutics were utterly futile in giving permanent relief. I failed to find any solution for these departures from the normal standards of health in the medical literature I possessed, or in post-graduate study. Most of these cases were not in those of purely neurotic temperament *per se*. Their complaints were of a fixed character rather than changeable, and their physical conditions were often of the best.

In discussing these unsatisfactory cases with a *confrère*, a most thorough-going and indefatigable investigator, he said he believed that such cases belong to a class whose nervous reserves were being continually exhausted, or, as he expressed it, "nervous force going to waste," because of some defect, not in the supply, but in overuse or leakage. He himself was a sufferer from "nervous dyspepsia." He had studied his own case, because well qualified men had failed to relieve him. Every organ had been examined and most of them treated by specialists, not excepting his eyes. While in New York City he spent some time at the library of the Academy of Medicine where he looked into some articles on heterophoria. He visited me and for the first time had an ophthalmic examination made. This examination revealed a muscular defect, the surgical correction of which brought relief. On that occasion I derived a most useful suggestion, from which I have been able to help many of my patients who otherwise would still be sufferers.

In presenting an article on this subject I am conscious of the suspicion that exists in the profession of any departure from the established ideas of the past. Some there are in the profession who are so conservative that they disbelieve anything that they themselves are unable to practice. Others treat such matters with indifference; while still others have deep dyed-in-the-wool prejudices. It is only necessary to listen to discussions of "new treatments" in medical society meetings when electro-therapeutics, or some similar measures are credited with accomplishing new results, to hear most unreasonable criticisms expressed; generally by opponents whose experience has been the most crude or who have had none at all.

The same is true regarding much that can be accomplished by eye treatment for many symptomatic diseases functional from peripheral irritation. The general practitioner cannot be blamed for holding himself aloof and for not accepting these truths when many of the older specialists in ophthalmology claim there is no such thing as "muscular asthenopia" after proper correction of refractive errors. I believe these specialists belong to one of the classes of conservative practitioners I have just mentioned. They refuse to acquire the technic or to use the instruments which are necessary to demonstrate that there is a condition of muscular imbalance which is as fruitful in producing functional reflex disorders as are refractive errors. It is as reasonable to deny the germ theory of disease because of ignorance of bacterial technic. There can be no question that, if an oculist ignores the investigation for, and correction of, muscular asthenopia, he neglects a most important duty he owes his patients and leaves a percentage—quite a proportion—of his cases unrelieved. This was testified to in a recent personal conversation with one of the surgeons of the Post-Graduate Hospital, who by a series of tenotomies obtained great relief.

I have a case in mind that is full of suggestive neglected possibilities. The patient is a man of twenty-four, now confined in one of the colonies

for epileptic insanity. He never had had a convulsion until he was ten years of age—the period of life when active school-work begins and use of the eyes becomes considerable. There was no family history, even of the remotest, of epilepsy. His mother is a sufferer from headaches. The attacks continued despite vigorous medication as long as he attended school. He was taken away from his studies and the convulsions ceased without medicine for three years. An attempt to take up art, after school-work, caused a relapse, the convulsions became more severe; and continued application to his art, combined with heroic drugging, brought on insanity. What better suggestive idea of the factor of eye-strain as the direct excitant of symptomatic epilepsy could be had than the citation of such a case.

The irritation to the brain from the reflex cause, when continued, eventually produced the true disease. The complicating insanity is perhaps the result of the long-continued use of bromides. The epileptic state has been produced by other reflex irritations, *viz.*, adherent prepuce, nasal deformities, etc., as may be found from abundant examples recorded in medical literature.

The factor which so often obscures diagnosis in these eye cases is that they rarely have any symptoms directly referable to the eyes themselves: on the contrary, many of them have better than normal vision. I am often confronted with the statement, "I am sure, doctor, that my headaches do not come from my eyes, as I can read the names of the steamboats on the river." It is these far-sighted eyes (hyperopic) that so frequently have their concomitant symptoms; and, moreover, a considerable proportion of those having a muscular anomaly are perfectly emmetropic or have normal vision. The efforts that the brain centers make in the acts of accommodation and adjustments in producing perfect pictures on the retina and in binocular single vision, more especially in near work, produce eye-strain, and reflex symptoms develop. When we realize the thousands of intricate and complicated adjustments required in the use of the eyes in properly conveying visual perceptions to the brain, can it be wondered at that nervous symptoms develop if those wonderful organs lack mechanical adjustments to work easily? Yet, as I have intimated, very few direct symptoms from defects are experienced in the eyes themselves: hence, the general practitioner frequently overlooks the indirect cause of nervous phenomena.

Direct eye symptoms are no more frequent in reflex functional derangements than is pain the first symptom of cancer. Another very interesting fact exists in this connection. It is not the high degrees of refractive errors that cause the most trouble, but the moderate and frequently the very low degrees that produce reflex symptoms. In the high degrees the blurring of the images on the retina cannot be overcome by any effort the brain may make through the nervous impulses sent to the adjusting and focusing apparatus of the eye. It is too gross for the ciliary muscles to act, and the brain ceases to send impulses, and the visual center accepts the imperfect impression without tiring. The schoolboy with such a state of affairs is a poor writer and speller and may be "a dunce," but his general health does not suffer. The girl with a slight astigmatism or a latent divergent squint (exophoria) will have headaches, get tired easily, is often sick at her stomach and is always "nervous." She has vision as acute as most normal eyes, but it is at an expense of nervous force. It is not the squinting eye that produces nervous troubles; for often the squinting eye is amblyopic, but, on the contrary, the latent not the manifest squint subjects often have nervous manifestations of some form or other.

Some pathological conditions occurring in later life are of interest because they are more than probably due to the anomalies under discussion. Glaucoma is more frequent in astigmatic eyes; and cataractous eyes are frequently abnormal in refractive errors. This is but one of the potent arguments why all eyes should be properly examined in childhood. A child's entire future may be dependent on the neglect of this; his education, his health, and in after life a helpless blindness might be prevented. Schoolteachers and parents often stigmatize a scholar "a dunce" because he cannot acquire knowledge through defective special sense organs. A child is often taken out of school on the advice of the family physician, for the reason that he or she suffers so much from headaches, "nervousness," etc., because there exists some latent eye defect the correction of which would allow the acquirement of an education and preserve a well balanced nervous system.

Although it is not my intention in this paper to cite pathological cases, but to relate those of functional derangement occurring in my practice, I desire to report a suggestive case of functional disorder due to congenital astigmatism. The patient was a woman of middle life infected with lues by her husband. After the primary lesions both eyes were affected by retinochoroiditis and the right with iritis. She never had worn glasses to correct a defect of 3.50 diopters of hyperopic astigmatism, and it seems to me that the normal standard of nutrition manifested in structure resistance was so perverted and lowered that the disease fastened itself in the weakest tissues, which in this case were the eyes.

To illustrate the ideas already set forth some cases are reported which may interest the general practitioner. A few others have been reported in the December (1889) number of *The Post-Graduate*, entitled "Ocular Reflex Neuroses."

Case I.—Hysteria gravior with delusions. H. B., aged twenty-nine years, German, single, housemaid. Father died of apoplexy. Mother alive and well. There is a neuropathic tendency in the family. Patient has had good health ex-

cept for an attack of measles at seven years of age. At that time her eyes were seriously affected; for weeks she was confined to a dark room and it was six months before she regained her sight. Following this the right eye squinted inward. She had diphtheria at eight, but recovered without sequelæ; also, scarlet fever at sixteen. She has always worked hard at housework and in Germany overtaxed her eyes by sewing at night by a poor lamplight. On December 23, 1898, the patient, having been left alone in care of her sister's children, was suddenly taken while at dinner with a sense of choking as if something had lodged in the left side of her throat. I was hastily summoned and instead of finding her coughing, choking and strangling saw a somewhat excited young woman who told me in a deliberate way that she was choking to death; that while eating plain chicken broth she had (as she supposed) accidentally swallowed a piece of meat or bone which had lodged in her throat, not in the larynx, but up behind the palate on the left side. I saw the chicken broth. It was clear and had no particles of meat in it. She described the sensation as something in her throat (pharynx) and radiating upward into her left ear. I could neither see nor feel anything there, yet she was insistant upon my removing the supposed cause of her trouble. Suspecting hysteria I took her to my office, carefully examined her, but, finding nothing abnormal, determined to create a mental impression by hurting her. I told her I had no instrument suitable for removing it and would use my finger to dislodge it and it probably would go down her throat. I produced considerable gagging with my finger in her throat, withdrew it, directing her to swallow quickly; I then made an application of cocaine and waited. She left my office convinced she had been relieved; but to my surprise early next morning she reappeared, stating that she could not swallow and there must be some chicken still remaining. Almost daily, often several times a day, at all hours, day or night, this poor girl came for an examination to be assured the throat was clear. For seven weeks she refused to eat, taking nothing but strained soup and broths and often would choke trying to swallow these. If she knew I was away from home she positively refused all kinds of liquids. She would suddenly grasp her throat, make frantic gasping and choking manifestations, and on two occasions had a clonic convulsion, greatly alarming her friends. She said she could not get her breath and was dying, as her heart beat so rapidly. She lost about twenty pounds in weight and became weak and unable to leave her bed. Repeated physical examinations were absolutely negative. She had two hyperesthetic spots in her throat on the left side below the tonsil. When these were touched it caused a clonic spasm of the muscles of deglutition and those of her larynx. The examination of her nose and ears was negative, as was that of the thorax, abdomen and pelvic organs. She had no areas of cutaneous anesthesia. The routine treatment for hysteria was but partially successful and no moral influence could induce her to eat. On one occasion I took lunch with her, but she could not swallow any solid food. I was at a loss for further resources, but thought an examination of her eyes the next in order, and on March 1, 1899, I carefully went over her refraction and muscular balance. I found she had compound hyperopic astigmatism of different degrees in each eye, and she disclosed homonymous diplopia at once when a red glass was put over either eye. This manifest evidence of a latent convergent squint, requiring a strong prism to unite the images, seemed a paradox when abduction was measured, it being double that of adduction. The external muscles overcame a prism of 30°, while the normal is but 6° to 8°. The internal muscles measured only in R. E., 14°; L. E., 18°—at least 50 per cent. too weak. This state of affairs called for a mydriatic; the effect of this was most surprising, for the same afternoon a desire for food was experienced and she commenced to take solids that day—the sensation in the throat was no longer the controlling and inhibiting influence over her normal appetite. The first day she got her glasses, the third after the mydriatic she partook of solids seven times. Within a week the last vestige of the throat symptom of hysteria had left her, and her return to health was rapid and satisfactory. She has not had any return of her symptoms since.

I performed two tenotomies on her external muscles, reducing the abduction from 30° to 4° without increasing the power of the internal, at the same time reducing an esophoria of 13° to 2° to 5°. This gave her binocular single vision and freedom from all discomfort. Her vision before treatment was: R. E. 20/200 w. + .75 ⌒ +3.25 ax. 90° = 20/50; in L. E., 20/50 w. + .75 ⌒ + 2.75 ax. 90° = 20/30. Before tenotomies on the external recti muscles she had a sensation of constriction over a small area of the scalp and diplopia, both of which were relieved by the operations. She received no medication whatever after her glasses were procured and the only other treatment she had was a few days of static electricity.

Here was a case with excessive abduction yet having a high degree of esophoria and homonymous diplopia—these last two conditions opposed to excessive abduction. The indication for interference, however, was plain to me despite the apparent esophoria and homonymous diplopia and the tenotomies on both externi reduced the three abnormal conditions and nearly balanced the eyes.

Case II.—Reflex epilepsy depending on a very slight refractive error, the relief with cylinder and spherical glasses, preventing unequal contraction of the ciliary muscles, being sufficient to prevent attacks. A. H. S., aged thirteen years. Neurotic, rheumatic and tuberculous family his-

tory. Had first attack at ten. Frequency, every four or five months. *Petit mal* diurnal. He was treated for dyspepsia with negative results. Patient was referred by his family physician to Dr. Francis Valk of New York, who prescribed glasses and found a slight insufficiency of right internus. He wore glasses constantly and had no further attacks. He lost his spectacles and went without them, and in a few months the attacks recurred. He was subsequently referred to me. I found his vision to be: R. E., 20/20; L. E., 20/20 +; would not accept any glass. Under mydriatic R. E. 20/20 + .50 cyl. ax. 90° = 20/15. L. E., 20/70 + 50 D ⌒ + .50 ax. 90° = 20/15; muscular balance good. These full correction glasses were given. He has had but one attack since, occurring one day while not wearing his glasses. The muscular trouble does not seem to be a factor, as it is but slight, and since his refractive errors are corrected it has played no part in his attacks. It is now over a year since he was fitted and I have recently seen him.

This case is an example of a very slight refractive error, yet the result of correction clearly proved the importance of its recognition under full mydriasis and correction on unequal refraction.

Case III.—Periodical migraine depending upon uncorrected refractive errors of vision. Wm. A., aged twenty-six years; married, American, carpenter; negative family history. Patient gives a history of "sick headaches" since he was a school-boy, occurring every six weeks when he was working. These attacks are accompanied by vomiting, prostration, and at times fainting attacks, facial pallor, small thready pulse of high tension and frequency, lasting from one to three days. The headache is general, of the angiospastic type, numbness of the extremities, "fortification spectrum," etc. This patient had no alcoholic or tobacco habits, has led a regular life, has no specific history, no malaria or rheumatic symptoms; urine negative; bowels somewhat irregular. Patient's general health was good in every way except the migraine. Physical examination negative. V. in O. D. 20/30; V. in O. S. 20/40. Under a mydriatic O. D. 20/50; w. + .67 D. ⌒ + .67 cyl. ax. 90° = 20/20 O. S. 20/50; w. + .67 D. ⌒ + .67 cyl. ax. 90° = 20/20. This full correction was given for constant wear. He went eight months without an attack, and this was undoubtedly caused by having his spectacle frame bent—changing the axis of his lenses. This was straightened and he had no further trouble until he broke his frame, when another attack occurred.

Case IV.—Intense morning headaches due to far-sightedness (hypermetropia), accommodative asthenopia for near work. Harold H., aged twelve years; school-boy, American. Both father and mother far-sighted. Patient was a devoted student, ambitious to progress in his school work. I attended him for some months for headaches that would awaken him during the early morning hours, causing such intense pain that he would cry for hours. This condition persisted in spite of medication, regulation of diet and correcting a constipated tendency, until it was about decided on by his parents to take him out of school, although his physical condition was vigorous and his health otherwise uniformly good. Before taking this step the eyes were examined; V. in O. D. = 20/30 w. + 1.25 = 20/15; V. in O. S. = 20/20 w. + 1.50 = 20/20. Under a mydriatic 20/70 in each eye w. + 1.75 D. = 20/20. The correction given being +1.50 D. for use in near work which completely relieved him. He improved so rapidly that he gained ten pounds in weight within six months, and school-work was extremely easy for him subsequently. I have seen him within a week. He is about to graduate. It is now three years since this examination was made and he informs me he had never been troubled since with his former affliction. He uses his spectacles for studying only.

Case V.—C. M. D., aged thirty-six years, American housewife, married. Has neuropathic antecedents. Patient was referred to me by her family physician in April, 1899, for an examination of her eyes. She was a well-nourished woman with a good personal history. She was given to emotional states. The summer previous she became interested in spiritualism and concluded with an attack of grave hysteria, amounting to actual mania for several days and requiring restraint and the administration of the most powerful sedatives. She was sent to the mountains soon after to recuperate, but owing to a cardiac lesion was in no wise improved and returned in an exhausted state in which she remained, a semi-invalid, for months. She formerly had some pelvic disease, laceration of the cervix and perineum; the cervix was repaired, but the relaxation of the pelvic floor still causes a retroversion and chronic constipation. This latter condition has been fairly well taken care of by a well adjusted pessary. She complained of pains in her temples and eyes, with fatigue on using them, congestive occipital headaches and uncontrollable nervous spells. V. in O. D. 20/70 w. + .62 ⌒ + 1.00 ax. 75° = 20/20; V. in O. S. 20/30 w. + .62 ⌒ + 1.00 ax. 110° = 20/20; under a mydriatic O. D. 20/100 w. + 2.25 ⌒ + 1.00 ax. 75° = 20/20; O. S. 20/100 w. + 2.00 ⌒ + 1.00 ax. 110° = 20/20. After mydriatic had passed off she accepted O. D. + .75 ⌒ + 1.00 ax. 75°; O. S. + .75 ⌒ + 1.00 ax. 110°, and these were given for constant wear. She had a slight (¼°) R. hyperphoria and 4° esophoria in distance with 7° in accommodation. Prismatic exercises soon overcame this manifest, and together with her glasses she has almost perfect freedom from all her old nervous complaints. She has not had any headaches or fainting attacks since wearing her glasses. Her physical condition is much improved in lessened muscular relaxation; better color, heart's action and general health.

Case VI.—Neurasthenia with hysterical attacks in a male, depending upon errors of refraction superinduced by nervous shocks and excitement. F. H. H., aged twenty-six years, Austrian, single, electrician. Family history good. Personal history negative as to specific diseases. Has had robust health. Had malaria and brain fever in South Africa. Has led a life of excitement, following the occupation of electrician for different theatrical troupes in different parts of the world. Wished to enlist in the United States Army at the outbreak of Spanish war. Was examined and refused, but determined to enter and afterward succeeded in getting into United States artillery. In May, 1898, he received a severe fright from a flash of light in short circuiting a 110-volt current in a large Newark establishment. This produced a temporary blindness for three hours with profuse lacrimation. He was very much frightened. This, together with the disappointment of not getting into the army, determined him to go home to Carlsbad, where he arrived early in May. His father put him in the care of an eye specialist who prescribed glasses for him. He had some trouble from the glare of sunlight on the water while crossing the ocean, which was the first difficulty he had ever experienced with his eyes. He wore the glasses for a time, his eyes feeling better. He returned in June and entered the artillery service of the Government. In August he had trouble again with his eyes at target practice. While shooting the target would vanish, the white and black became mixed, which made him nervous. A few days after he became much agitated while standing in line with the artillery facing the sun and a reflected glare from the water. The moving of the rifles in practice exercises in this glare and sunlight brought on an uncontrollable nervous attack with pain in the base of the brain, blepharospasm, headache, nausea and "spectra" before his eyes. He was taken to the infirmary, being unable to perform his duties. Owing to no outward evidence of any inflammation of the eyes, his companions jeered him almost into a frenzy. The post surgeon, not being an oculist and always suspicious of malingering in the men, not finding any physical evidence of his nervousness, the ocular condition remained unrecognized. He became thoroughly incapacitated for duty and instead of going to the front was sent to one of the convalescent homes for sick soldiers instituted by that good and generous woman, Miss Helen Gould. He was treated there for neurasthenia with drugs only, and seen by an oculist who diagnosed hyperemia of the retinæ. A transference to another home brought him under my observation. I thoroughly examined him and finding no physical cause for his neurasthenia, he being in perfect physical health, I was attracted to his eyes by the fact that he choose dark corners of the sitting-room, avoided the lamplight and pulled his cap well down over his forehead when out-of-doors. Upon questioning him, I elicited from him this interesting history. I had him visit my office where I thoroughly examined his eyes. V. in O. D. 20/100 w. + 1.25 D. = 20/40; V. in O. S. 20/50; accepted no glass. Under a mydriatic: V. in O. D. 20/200 w. + 2.25 D. ⊂ + 2.25 ax. 80° = 20/40; V. in O. S. 20/100 w. + .75 D. ⊂ + 2.25 ax. 65° = 20/30. Javal's ophthalmometer: R. E. $\frac{22.00 @ 80°}{24.50 @ 1.0°}$; L. E. same Retinoscopic examination confirmed this approximately. Ophthalmoscope showed cornea, lenses, and vitreous normal; retinæ hyperemic; nerves normal but hypersensative to light. With the correction, after mydriatic has passed off, he showed ¾° L. hyperphoria; 2° of exophoria in distance with 5° in accommodation. Muscles showed R. E. 30 × 6 × 1 : L. E. 30 × 6 × 2. No diplopia with red glass, and normal convergence. Treatment by full correction of the astigmatism and part of the hypermetropia. He remained under my care for a few weeks and improvement was rapid. His sleep returned within a week. The pain at the occiput disappeared at once. By Christmas he was entirely well.

In conclusion, it is apparent from my personal experience that there are many cases presenting nondescript ailments, due to some latent irritation to susceptible nervous centers, capable of reflecting impressions to organs easily deranged, that are indirectly dependent upon abnormal conditions of congenital eye defects in refraction and muscular imbalance. It is not supposed that most general practitioners can become experts in the detection of the obscure etiology of these conditions, yet it is a matter for consideration and to be thought of most frequently instead of passively or openly ignoring the work done in this field, which is beginning to be entered by investigators conscientious in their endeavors to seek the truth. It is a favorable sign of progress that those who but a few years ago looked upon the subject as a fad are not opposing it openly to-day. I have seen many patients who had suffered for years relieved in a few weeks' of treatment—some in a few days. There is no reason why people so afflicted should go on to acquire a chronic habit of nerve derangement, or a fixed and intractible nervous disease, if the primary and exciting cause can be discovered and is amenable to treatment; and it is for this plea that this article is submitted for thought and reflection to those who so frequently meet these cases, *i. e.*, the general practitioners.

The following case is of interest in illustrating what may be accomplished in restoring some measure of function to a useless eye and correcting a deformity:

Miss J. M., aged twenty years. History of eye trouble on maternal side; near-sighted astigmatism in right eye and far-sighted astigmatism in the left eye, both compound, complicated by a divergent squint in right eye and a resultant amblyopia exanopsia. V. in O. D. 3/200 w—1.25 D. ⊂ — 2.75 cyl. ax. 180° = 20/200; V. in O. S.

20/40 w. + 1.50 D. ⌒ + .50 cyl. ax. 90° = 20/20; Javal's ophthalmometer = R. E. $\frac{23.75 @ 90°}{25.50 @ 180°}$; L. E. $\frac{24.00 @ 90°}{25.00 @ 180°}$ Retinoscopy and the ophthalmoscope confirmed these findings. Binocular single vision was possible only with a 20° prism base in over the right eye and 7° pr. B. down over the left eye. She fixed entirely with the left eye. Spectacles were given for constant wear correcting fully her refraction, and a grab front worn over these with prisms partly correcting the muscular defects. Supplementing this she was directed to wear a blinder over the good left eye for one or two hours twice a day and go about as usual to stimulate the function of vision in the amblyopic right eye. With these corrections and exercises she soon learned to use this eye to a considerable extent. Weekly the prisms were increased until she was wearing 8° B. in over right eye and 4° B. down over left eye. A continuation of this treatment for four months showed a decided improvement in vision in distance in readily and quickly recognizing the 20/200 letters or the second image of the candle; while at reading distance at first only certain letters in No. 14 Jager types were seen whereas at this time she read sentences in No. 11. I then made a complete tenotomy of the right externus, correcting the manifest squint, and six weeks later a partial tenotomy of the superior rectus of the left eye for the hypertropia, getting rid of this latter condition and reducing the exotropia more than one-half. A subsequent advancement of the right internal rectus is under advisement. The improvement in the appearance of the patient from a cosmetic point of view is most marked and satisfactory. From a tilting sidewise of the head and an eye mostly in the outer canthus, she now carries her head straight and has two parallel eyes. The aim in this case in undertaking treatment had been, first, to restore the function of vision in a blind eye and to make it to some extent useful in case the sound eye met with an accident, and, secondly, to correct an existing deformity in the divergent strabismus. Improvement is continuing in the betterment of visual acuity and it is reasonable to hope for still more.[1]

PRESENT STATUS OF INTERSTATE RECIPROCITY CONCERNING LICENSES TO PRACTISE MEDICINE.

By EMIL AMBERG, M.D.,
OF DETROIT, MICHIGAN.

(Continued from page 652.)

18. *Kansas.*

Answer to Question 5. Yes.

Answer to Question 6. We would.

Answer to Question 7. A congress composed of representatives of all the State Boards of Health in the United States might possibly be able to formulate some plan of action.

A better way, perhaps, would be to appoint a committee and authorize it to select the best parts of the several laws of the different states, and, from these selection compile a law, submit it to the Boards of Health in the United States for approval. (Signed) W. B. SWAN.

19. *Kentucky.*

No one can begin to practise who has not graduated from a recognized college requiring attendance upon four courses of lectures and meeting the other requirements of the American Medical College Association. Until there is a far more rigid enforcement of similar laws in other states of the Union it is not the intention of this Board to take any steps looking to interstate reciprocity.

(Signed) J. N. MCCORMACK.

20. *Louisiana.*

The Board, individually, is in favor of entering into an agreement which will recognize certificates from other Boards requiring the same standard as the Louisiana Board, but the Louisiana law requires all applicants to stand a written examination, and I do not see just now how this can be overcome. However, I will present the matter to the regular meeting of the State Society with the view of overcoming all obstacles.

(Signed) H. S. COCRAM.

21. *Maine.*

Representatives from all the Boards in New England met at Boston February 1, 1900, and after a discussion it was the unanimous opinion that radical changes in the laws are necessary to enable even the New England States to reciprocate in examination and registration. The desirability of this was conceded by all, etc.

(Signed) A. K. P. MESERVE.

22. *Maryland.*

Replying to your request of recent date, I beg to say that it is not our purpose to do anything at all with "Interstate Reciprocity for the License to Practise Medicine." Attempts to secure desirable modifications in the law came near destroying all law on the subject. We regard the present control of the stranger who desires to come into our gates as very satisfactory, and venture to commend it to others who really desire something good.

(Signed) J. MCP. SCOTT.

23. *Massachusetts.*

(See Maine.)

24. *Michigan.*

Part of Law: "The applicant shall be registered and given a certificate of registration if he shall present a certified copy or certificate of registration or license which has been issued to said applicant in another state of the Union where the requirements for registration shall be deemed

[1] A shortening of the right internus and a second complete tenotomy of the externus have resulted in perfect orthophoria, abolishing completely the diplopia and correcting the divergent squint.

by said Board to be equivalent of those of this Act. Provided such state shall accord a like privilege to holders of certificates from this Board. The fee for registration from applicants of this class shall be ten dollars."

25. *Minnesota.*

The physicians of this state are, I believe, beginning to see that reciprocity is desirable in the way of medical certificates. As secretary of this Board I shall ask that some provision be made in our next medical bill, which we propose to introduce at the next session of our legislature, in January, 1901.

(Signed) John B. Brimhall.

26. *Mississippi.*

Answer to Question 5. I would consider such a proposition.

Answer to Question 6. I will bring the matter before my Board at its next meeting, and, if so instructed by it, will gladly cooperate with you. (Signed) J. F. Hunter.

27. *Missouri.*

Answer to Questions 5 and 6. Yes.

Answer to Question 7. We believe that this is the only way to really succeed in advancing and maintaining the same, in both medical education and legislation, and we offer our hearty cooperation in an effort of this kind.

(Signed) E. L. Standlee.

28. *Montana.*

The Medical Practice Act of Montana provides that all applicants shall pass the Board of Medical Examiners' examination. Nothing has been done by us looking toward reciprocity, and no particular intention is evident.

(Signed) Wm. C. Riddell.

29. *Nebraska.*

Answer to Questions 5 and 6. Yes; but few states have as good a law as Nebraska.

Answer to Question 7. In my opinion our only hope is government recognition and control over medical education. Anything else is probably hopeless so far as securing a uniformly high standard is concerned. What could be done with Missouri, and many other Southern states?

(Signed) B. F. Crummer.

30. *Nevada.*

Answers to Questions 5 and 6. Yes.

(Signed) S. C. Gibson.

31. *New Hampshire.*

(See Maine.)

Part of law: "Applicants examined and licensed by other State Examining Boards registered by the regent as maintaining standards not lower than those provided by this chapter, etc., etc., may, without further examination, on payment of five dollars to the regent and on submitting such evidence as may be required, receive an endorsement of their licenses or diplomas, conferring all rights and privileges of a regents' license issued after examination.

32. *New Jersey.*

Part of Law: "Certificates of examination and license issued by the Board of Regents of New York, and by the Medical Councils of Pennsylvania and Delaware, based upon examination by the respective Examining Boards of those States, may be endorsed at any time by this Board. Blanks for this purpose must be obtained from the Secretary, and, when properly filled out and returned for filing, must be accompanied by a certified check, or postal money order, for the regular fee of fifty dollars."

33. *New Mexico.*

Answer to Question 5. Yes, if we did not have to recognize a lot of newspaper advertisers who hold licenses in other states.

Answer to Question 6. Yes.

(Signed) T. P. Martin.

34. *New York.*

Part of law: "Applicants examined and licensed by other State Boards registered by the regents as maintaining a standard not lower than those provided by this article . . . may, without further examination, on payment of ten dollars to the regents . . . receive from them an endorsement of their license."

The attorney-general, the legal adviser to all the state departments, has decided that no discrimination should be made in the interpretation of this law whereby the licenses issued by other states could be endorsed unless the state itself observed a standard (both of its academic and in its examinations and tests) which was equal to that maintained by the officials having charge of such examinations in the State of New York. Because of that decision the State Board of Medical Examiners has up to this time been unable to recommend the indorsement of licenses conferred by other states, and, inasmuch as the law has also been held to apply to states of the United States only, the indorsement of licenses issued by foreign countries has also been impossible. The State Board of Medical Examiners is on record as being in favor of reciprocal action in connection with the indorsement of licenses as soon as the law can be so formulated as to make such a procedure possible without any discrimination against the interests of those who are educated and licensed to practise medicine within the borders of this state.

(Signed) M. J. Lewi.

35. *North Carolina.*

You will note that a license from another state only entitles to examination, just as a diploma from a college in good standing does.

We considered the reciprocity idea, but our standard is so much higher than it is in most of the states that, for the present at any rate, we

are afraid of it. We can see no objection to requiring a physician who wishes to practise in our state, coming from another state, to submit to the same conditions that we demand of our own people. I do not wish to throw cold water upon your work, but I do not think you can count on North Carolina for a good many years to come.

(Signed) Chairman Com. on Legislation.

36. *North Dakota.*

I would say that all the members of our Board are in hearty accord with the reciprocity movement, and that when the measure becomes generally adopted we will be found in line. We expect to prepare for it by having the necessary amendment to our law passed at the coming session. (Signed) H. W. Wheeler.

37. *Ohio.*

Part of Law: "Provided further, that the Board may, at its discretion, dispense with an examination in the case of a physician or surgeon duly authorized to practise medicine or surgery in any other state, territory, or the District of Columbia, who may desire to change his residence to Ohio and who makes application on a form to be prescribed by the board, accompanied by a fee of fifty dollars, and presents a certificate or license issued after an examination by the medical board of such state, territory or the District of Columbia, accorded only to applicants of states, territories or districts whose laws demand qualifications of equal grade with those required in Ohio; but such examination shall not be dispensed with unless under the law and regulations of the state, territory or District of Columbia, equal rights and privileges are accorded to physicians and surgeons of Ohio holding the certificate of the board, who may desire to remove to, and practise in such state, territory, or the District of Columbia."

38. *Oklahoma.*

I believe it would be possible to enact a law in this territory imposing interstate reciprocity. The same would be agreeable to the medical profession. If this is ever achieved Oklahoma Territory would be one of the first political divisions to fall into line with the improved era of medical legislation. (Signed) L. Haynes Buxton.

39. *Oregon.*

As previously stated to you, this Board, under its present law (a copy of which I inclose) can do nothing in this matter. However, the Board is favorable toward such a law.

(Signed) Byron E. Miller.

40. *Pennsylvania.*

The Medical Council of Pennsylvania recognizes licenses issued by the State of New York and the State of New Jersey.

(Signed) Nathan C. Schaeffer.

41. *Rhode Island.*

(See Maine.)

42. *South Carolina.*

Our Board is with you in our wish to enter into reciprocity with other State Boards. . . . We were afraid to inject new matter into the discussion at this time, but will work for the reciprocity feature when expedient.

(Signed) S. C. Baker.

43. *South Dakota.*

So far as I am able to state nothing has been done officially in regard to professional reciprocity, but I have heard the opinion of prominent medical men in our state to the effect that they were in favor of this movement and would cooperate with any and all influences to bring it to a satisfactory accomplishment.

(Signed) A. E. McClough.

44. *Tennessee.*

Our law has been so emasculated and altered that we are almost discouraged, and, unless the next legislature improves it, the Board will resign. This being the case, nothing has been done in regard to "Interstate Reciprocity." We could not ask any state to accept our certificates. They are only certificates of holding a diploma from some Tennessee college. The law now requires an examination of only those who have been so unfortunate (?) as to not have graduated in a Tennessee college, or a non-graduate.

(Signed) T. J. Happel.

45. *Texas.*

I am sorry to say that the state of Texas has no State Board of Medical Examiners; we have so-called district boards, but under existing statutes their organizations and operations are farcical, as they often license men without diplomas, and commit so many irregularities that we would be better off without them. The State Association has labored so far without success to obtain the enactment of an adequate law. We expect, however, to continue our efforts.

(Signed) H. A. West.

46. *Utah.*

The law of our state must be amended to allow interstate reciprocity, which, no doubt, will be done in the near future.

(Signed) J. F. White.

47. *Vermont.*

All the medical examiners of the New England States are to hold a meeting semi-annually with the idea of uniformity in examinations and interstate reciprocity. See Maine.

(Signed) H. C. Tinkham.

48. *Virginia.*

Just what action the Board will take in regard to accepting other state certificates I am unable to say until after our June meeting, but suppose we will exchange certificates with all other boards having the same requirements as ours. I am strongly in favor of interchange of certificates among the states, and shall use all my in-

fluence to obtain this very desirable result with those states who wish to exchange and whose requirements are in every way equal to ours.

(Signed) R. S. Martin.

49. *Washington.*

Answer to Question 5. No. It might tend to establish a "Medical Colony" in South Dakota, to the detriment of the already established "Divorce Colony," which should stand alone as a monument to the ambition of a growing state.

Answer to Question 6. Yes.

Answer to Question 7. Will submit the matter to the Board at next session.

(Signed) W. G. Tucker.

Note.—This answer has been classified as unfavorable, in the third committee report.

50. *West Virginia.*

Answers to Questions 5 and 6. A few years ago we made an effort of this character to the states contiguous to this, and they declined, since which we've rested. Our legislature, having made an effort to this end several years ago and having been snubbed by contiguous legislatures (save Maryland), would feel disposed to wait further action on their part.

Answer to Question 7. After some action of legislatures of adjoining states in the matter, our Board would be ready to act, and might have something to suggest. Not till then.

(Signed) A. N. Barbee.

51. *Wisconsin.*

Part of medical law, 1898: "Any practitioner of medicine holding a certificate from any other State Board imposing requirements equal to those established by the Board provided for herein may, on presentation of the same with a diploma, be admitted to practice in this state without an examination, at the discretion of the Board, on payment of the fee."

The project of a National and State League of State Licentiates with reciprocal arrangements with states of equal standards has been frequently considered by the Board. A strong effort will be made at the meeting of the next legislature to advance our standard to a state examination of all graduates.

(Signed) H. M. Ludwig.

52. *Wyoming.*

We, as a Board, have made it a rule to issue no license to practitioners, except in compliance with the requirements of our own laws.

Owing to the fact that some states which have good medical laws seem to have Boards that are very lax in enforcing their requirements, we have deemed this course not only advisable, but absolutely necessary in regulating this matter in our own state. So long as the authority to grant a license is vested in the members of the Board to the degree as it is in many of the states, we do not feel that we can consistently enter into any interstate reciprocity, even if we had the legal power to do so. This board has just received a personal recommendation from the president of the ———— State Board of Medical Examiners, in behalf of a man whose sole claims for recognition was a diploma issued by one of the most disreputable "mills" in the country. So long as State Boards are so utterly indifferent in performing their duties as the one above mentioned (the applicant is a registered practitioner in ————) we are distinctly opposed to reciprocity with such people. It is needless to say that the applicant was refused a certificate. (Signed) Geo P. Johnson.

These answers speak for themselves. There is not a single political division, I think, which does not express the desire for an improvement, be it in its own jurisdiction or in that of another part of the Union.

The medical profession, and the people, are under great obligations to all these writers, also to all members of the profession and to all others who work for a betterment of the conditions under consideration.

I, for my part, take occasion in this place to express hearty thanks to all who facilitated our work.

As to the future steps to be taken, permit me to offer the following suggestions:

It is advisable that all local medical societies in the United States appoint committees to study the question. The various state and territorial medical societies should appoint a central committee which should be in touch with the committees of the local societies and also with a committee to be appointed by the American Medical Association or by the Section on State Medicine. The latter committee should be in constant touch with a committee of the National Confederation of the State Medical Examining and Licensing Boards.

Besides the advantages of having committees which could work continuously one with another, the committees at the same time could spread information. They thus would be educational factors of no little importance. Meanwhile, the various societies in the United States should have the reciprocity clause added to their medical laws.

It also would be advisable, as I pointed out a few days ago, that the certificates of medically stronger states and territories be accepted by the weaker states or territories, without the stronger division accepting the certificates of the weaker division. This point has also been brought forward by the secretary of the American Academy of Medicine, Dr. McIntire. I defended the idea quite a while ago in Michigan. My suggestion was not accepted, however, for reasons which, I think, are of local interest, although it was in my opinion an injustice to enact the law as it stands now. A well-known United States official, in a communication to me, calls the clause in the Michigan law an exceedingly unfortunate one. We see that New Jersey and Pennsylvania set us a good example in this respect.

The various political divisions will, we are

sure, encourage the movement, and lend a helping hand to establish a condition of affairs worthy of the present age. The best qualified physicians should be available to all, and the medical profession will not cease in their efforts until the point is reached when the title "doctor of medicine" in any place in the United States gives the guarantee that the bearer complied with those requirements which the present state of medical science demands.

If we view interstate reciprocity for the license to practise medicine from our standpoint as physicians, as citizens, and as men, we must admit that a more timely and more humane proposition has never been before the medical profession or before the people of the United States.[1]

MEDICAL PROGRESS.

Thiocol in Tuberculosis.—J. Braun (*Klin. therap. Woch.*, Sept. 23, 1900) has found that most of his patients rebel against the disagreeable taste of creosote and guaiacol and therefore recommends thiocol, which, while it possesses an equal efficiency, is more pleasant to take, since it possesses only a slight salty and bitter taste which does not persist. It is indicated especially in advanced cases with good pulse and may be given in several doses of one-half to one gram daily with none but encouraging results.

The Treatment of Scabies.—Of the many agents recommended in the treatment of this distressing condition the most widely used and generally approved are probably balsam of Peru, styrax, betanaphtol, tar, petroleum, and sulphur. Good results are to be attained by the use of each one of these, but each one also has its distinct contraindications in its compromising odor, property of staining the linen or irritative action on the skin or on the internal organs after absorption. By a careful series of comparative observations made by immersing acari from infected patients in various parasiticide preparations Richard Sachs (*Deutsche med. Woch.*, Sept. 27, 1900) determined that the greatest efficiency is manifested by styrax, betanaphtol and a new synthetic product to which the name of peruscabin has been given. In composition this represents the active constituents of balsam of Peru, being a mixture of cinnamein, styracin and cinnamic acid; it is odorless, non-staining and non-irritating to the skin or internals organs. It is best applied diluted with three parts of castor oil and should be rubbed over the entire surface three times in thirty-six hours. At the end of this time the underwear and linen are changed and three or four days later a full bath is taken. Thirty-five cases were successfully treated in this way, the cure being absolute and no irritative or other untoward effects being produced even in patients already suffering from eczema, dermatitis, etc. The remedy is especially to be recommended for use in children, in debilitated patients and in those having other complicating skin diseases.

Digitalis, Strophanthus and Diuretin.—The best authorities differ widely in their opinions relative to the comparative action of these drugs as diuretics in health and in disease. J. A. MacCaren (*Med. Chron.*, Sept., 1900) has conducted a series of experiments upon himself and has also accumulated some valuable clinical data from hospital patients. During a period of twelve days he took on the fifth, sixth, seventh and eighth days an average of a dram and a half of tincture of digitalis each day. On the seventh day toxic symptoms appeared and diuresis set in. There was an increase in the amount of urine passed from 40 to 47 ounces per day, and an increase in the excretion of urea from 507 to 521 grains. No diuretic effect was obtained from the infusion, but no toxic symptoms appeared. No diuresis was obtained from the use of eighty-five minims of tincture of strophanthus taken during four days, or from two hundred and seventy grains of diuretin taken during three days, although marked toxic symptoms appeared in both instances. In disease "spontaneous diuresis" is believed to be responsible for many of the good effects attributed to drugs. Rest in bed and a regular diet will alone cause diuresis in sixty per cent. of cases in from two to five days. The urea excretion is similarly increased. In 26 cardiac cases treated by digitalis an increase in excretion of solids and fluids took place in 22 cases, and the best results were obtained from the tincture, ℥ xv every four hours, or from Nativelle's granules, one three times per day. Out of 13 cases in which strophanthus was used 8 showed diuretic effects, though not so marked as from digitalis and much more disagreeable gastro-intestinal symptoms followed. Diuretin increased the urine in 6 out of 12 cases, its advantage being the rapidity of its action, but its toxic symptoms were more marked than digitalis and its effect less prolonged. In Bright's disease, however, it acts more favorably than digitalis or strophanthus. In cardiac dropsy digitalis is the drug *par excellence*, being more powerful, less toxic and more certain than the other drugs.

Faucial Inflammation Resembling Diphtheria.—A faucial condition very similar to that due to the Klebs-Löffler bacillus is sometimes observed in patients who do not present the clinical symptoms of diphtheria and do not respond to the treatment of that disease. F. Nilly (*Med. Chron.*, Sept., 1900) reviews four cases and points out the features which distinguish them from diphtheria. (1) The local lesion is more gangrenous in nature, and the ulceration exposed by the separation of the slough is more constant and extensive. (2) The disease is of a more febrile nature and delirium is not uncommon.

[1] Read before the Section on State Medicine of the American Medical Association.

(3) Paralyses do not occur. (4) Recovery, when it occurs, is more rapid and the heart is less affected. (5) The Klebs-Löffler bacillus is present only in small numbers, if at all. (6) Streptococcus pyogenes is the preponderating organism. (7) The diphtheritic antitoxin does not affect the disease. The local appearance is not so characteristic as to be diagnostic. The temperature range, however, is somewhat significant. The author states that a case of apparently membranous faucial inflammation exhibiting a temperature of 103° F. for two consecutive days is probably not one of true diphtheria. This condition, however, is liable to run a constantly high temperature for several days. Signs of cardiac weakness, so common during the prolonged convalescence from diphtheria, are not present in this pseudo-form. So far as the bacteriology of these cases is concerned it is impossible to draw any conclusions from so little material. Several examinations failed to demonstrate the presence of the bacillus diphtheriæ in two of the cases and they were found in very small numbers in two others. The streptococci pyogenes were present, however, in large numbers, but on account of their omnipresence no conclusions can be drawn.

Obstruction of Common Bile-Duct.—The symptoms vary, says J. B. Deaver (*Phila. Med. Jour.*, Oct. 6, 1900), according to the character and cause of the obstruction of the duct. Acute obstruction gives sudden onset of colic, nausea or vomiting or both, pain, tenderness and in some instances collapse and jaundice. Colic in this obstruction is due entirely to the effort of the duct to expel the foreign body and is analogous to the colic of appendicitis. When the stone is situate near the duodenal end of the duct, the cramps may be continuous and cease only when the calculus either drops into the gut or returns into the duct, after the manner of a ball in a ball valve. Coincident with the seizure of colic is pain in the region of the liver often referred to the epigastrium, the umbilicus, the right shoulder and the right chest-wall. A normal at the midpoint of a line joining the umbilicus and the tip of the ninth rib will correspond quite well to the course of the common duct and over this should lie most of the pain and the tenderness. This tenderness is always very pronounced, even upon very gentle palpation and the presence of cholecystitis accentuates it to a large degree. Rigidity of the right rectus muscle is also a very early sign obtainable by the slightest touch of the finger-tips. Such delicate examinations reveal more than almost any other one means. Marked fixation of the flat muscles in the upper right quadrant of the abdomen is more commonly a later development in the disease. Nausea and vomiting are purely reflex. The temperature is also an important symptom. In an acute case a rise shows the advent of inflammation. In a chronic case the intermittent form usually indicates gallstones. Collapse may be either only a reflex or may forerun rupture of the duct. Jaundice is not a constant symptom in the acute cases, although the obstruction may be complete, as in acute edema of the mucosa and arrest of a calculus. But permanent closure of the bile-passages always has jaundice and in the case of cancer is always progressive. A differential diagnosis of the cause of the obstruction should always be tried. The chief points therein are: Previous attacks of bilious colic associated with pain and tenderness in the region of the liver, with or without jaundice; vomiting and its coincidence with or priority to the colic; attacks of jaundice following each attack and present soon after the pain; recurrent attacks of colic with jaundice and an irregular fever. To distinguish between stenosis and other non-malignant causes of obstruction, without exploratory laparotomy, would be an impossibility. The most common cause of malignant stenosis is cancer of the head of the pancreas. This neoplasm gives progressive loss of flesh and strength, digestive disturbances, absence of characteristic colic, pain, no temperature elevation and sooner or later a palpable tumor in the epigastrium. The treatment is medical and then either preventive or expectant or surgical and then either palliative or curative.

Suprarenal Extract and the Heart.—Much has been written about the so-called constitutional effects from the internal use of the suprarenal extract, but very little reliable clinical data have yet been furnished. S. Floersheim (*N. Y. Med. Jour.*, Oct. 6, 1900) has experimented with several normal and abnormal cardiac cases with the idea of determining what effect, if any, the drug has upon this important organ. When the powdered suprarenal is placed on the tongue, mixed with the saliva and chewed thoroughly, he has found it to show its effects within ten seconds; at other times it has required ten minutes. He has not seen a case with a weak irregular pulse in which the effects were not manifest within ten minutes. Although the action of the drug is very rapid, its effects have passed off as rapidly, and the changes in the heart's action never seem to be at all permanent. Upon the normal heart no influence has been detected after the administration of this drug, and the normal pulse in cases of organic disease is likewise unaffected. Dr. Bates believes it to be the most powerful known stimulant of the heart, but admits that its action is only temporary.

Etiology of Gall-Stones.—F. C. Shattuck (*Phila. Med. Jour.*, Oct. 6, 1900) enumerates the well-known causes of biliary calculi as: (1) Cholesterin, bilirubin calcium precipitated by changed reaction, bacteria of various types, foreign bodies. Frerichs and Naunyn give stasis, catarrh and changed reaction as the three chief causes. (2) Age, very uncommon in childhood, rare under thirty, somewhat common between thirty and sixty, very usual after sixty years. (3) Females suffer from them in the ratio of

four to two. (4) Anything predisposing to stasis; here are felt the influence of age with its less active or slightly pathological metabolism, of sex with the sedentary life of woman, of enforced quiet in heart-disease, of confinement among the insane, of altered anatomical relations in floating kidney, gastroptosis, pregnancy and lacing. (5) Bacteria are very important. Modern methods show (*a*) sterile foreign bodies do not cause gall-stones, though a sterile gall-stone may be penetrated at least by the colon bacillus; (*b*) the contents of the hepatic and cystic ducts are usually sterile; (*c*) those of the common duct are usually infectious directly from the duodenum; (*d*) gall-stones have been experimentally produced; failures have followed the use of virulent cultures, while attenuated cultures with or without foreign bodies have succeeded; (*e*) bacteria are found in a very considerable number of gall-stones; (*f*) the clumping peculiarity of the typhoid bacillus seems to be a very active factor and has succeeded experimentally; (*g*) the bacillus coli communis and bacillus typhosus are the most potent generators of biliary calculi.

Drainage of the Biliary Passages.—The indications are alike for operative interference and for drainage is the opinion of J. E. Summers, Jr. (*Phila. Med. Jour.*, Oct. 6, 1900), and are these: (1) Acute or chronic cholecystitis not amenable to medical treatment and occurring either independently or as complications and sequelæ of infectious disease. (2) Gall-stones in the bladder or ducts producing frequent attacks of colic with or without jaundice. (3) Palpable enlargement of the bladder, especially if pus is probably present. (4) Suspicion of phlegmon, ulceration or gangrene of the gall-bladder. (5) Of puncture, perforation or rupture of it. (6) Suppuration in the ducts of the liver. (7) Signs of stricture or foreign body occlusion of the ducts. (8) Of neoplasms or adhesions hindering the normal outflow. (9) Intestinal drainage is indicated when external is impossible. In order to facilitate the closure of the drainage tract from the bladder he follows this technic: The bladder is sutured to the parietal peritoneum in the usual way, but about three-quarters of an inch back from the wound in it. Mattress sutures are then placed in this manner. The first loop penetrates all the muscle layers of the wall, emerges just within the suture line above, then pierces at this point all coats of the bladder and, finally, passes again through all the bladder layers near the margin of the bladder wound. The second loop is just the reverse of each step. When tied, the free margin of the bladder is double upon itself so that the mucosæ are in contact and the peritoneum forms a complete margin of the bladder wound. When the drain is out, rapid adhesions are claimed to occur. Chromated gut is used.

Typhoid in Children.—The statistics of one hundred cases under fifteen years of age are given by A. D. Blackader (*Montreal Med. Jour.*, Sept., 1900). Four only were under two years, 13 between two and five years. In 13 cases the onset was sudden with marked gastro-intestinal disturbances. As initial symptoms headache occurred in 68 cases, vertigo in 19, anorexia in 49, chilly feelings in 12, chills in none, vomiting in 18, diarrhea in 36, constipation in 59. Fulness of the abdominal parietes was noted in 48 cases, abdominal pain in 33, tenderness in 15, epistaxis in 23, tonsillitis in 6. The step-like ascent of temperature at the onset was noted in only 8 cases. After the first week the temperature in most cases was markedly remittent, the evening temperature reaching normal, however, about the end of the third week. In 19 cases the fever reached 105° F., in 16 the temperature remained low and the fever lasted under two weeks. The spleen was palpable in 70 cases. Rose spots present in 55, tenderness in left hypochondriac region in 18. A diffuse erythema of neck and chest during the first week was noted in 2 cases. No severe hemorrhage occurred, but in 4 cases there were traces of blood in the stools. In 19, sonorous and sibilant râles were present at the bases of both lungs. A soft, systolic murmur at apex or base was heard in 22 cases. Drowsiness or semistupor and restlessness or sleeplessness occurred about equally; 18 cases had mild nocturnal delirium, and 1 only developed the typhoid state. There were cases with otitis, periostitis, and furunculosis. The Widal reaction was carefully sought for in 43 cases, in 3 of which it failed. It varied in its appearance from the fourth to the twenty-eighth day and once did not appear until convalescence had set in. The treatment consisted mostly in cool baths, beginning at 90° to 85° F. and lowering to 85° to 75° F. In 30 instances systematic sponges were given every three hours with water at 70° F. The stimulants used were whiskey or brandy, administered freely in some cases, and strychnine. The chief dietary was milk, diluted, if necessary. The author believes that alcohol is a rapidly and easily appropriated food. He advocates the use of the cool bath once or twice a day even after the pyrexia falls below 102° F. This procedure is not to be continued indefinitely however.

Jaborandi.—H. A. Jowett (*Brit. Med. Jour.*, Oct. 3, 1900) has contributed an important addition to our knowledge of the alkaloids of Jaborandi. Gerrard and Hardy isolated pilocarpin and later pilocarpidin and jaborin were isolated. Jowett, however, fails to find any trace of an alkaloid like jaborin and concludes that in true jaborandi leaves no such alkaloid exists. He has confirmed Marshall's report on the presence of an isopilocarpin, isomeric with this alkaloid, and identical with the alkaloid formerly named pilocarpin by Petit and Polonowsky. This leaves the alkaloids from true jaborandi to be pilocarpin, isopilocarpin and pilocarpidin.

THERAPEUTIC HINTS.

Urethral Chills.—To ward off chills following internal urethrotomy or the use of sounds, Weir prescribes:

℞ Morph. sulph.... .006 gm. (gr. 1/10)
Tinct. aconiti.... .15 cc. (♏ ij)
Ol. gaulther....1.0 cc. (♏ xv)

Dormiol.—For the administration of this new hypnotic compound of chloral and amylene hydrate, the following formulæ are recommended:

℞ Dormiol, 10% solution..100.0 (℥iiiss)
Syr. raspberry.....ad. 120.0 (℥iv)

One to two tablespoonfuls at bedtime.

℞ Dormiol, 10% solut..... 90.0 (℥iij)
Ext. licorice..... 4.0 (℥i)
Syrup .....ad. 120.0 (℥iv)

Shake before using. A tablespoonful at bedtime.—*Merck's Archives.*

Amenorrhea.—Huchard orders that the lumbar region be rubbed, on retiring, with

℞ Chloroform ..... 10. (℥iiss)
Ether ..... 20. (℥v)
Spt. camphor..... 90. (℥iij)

This to be supplemented by mustard foot-baths, sinapisms to the internal aspect of the thighs, and vaginal injections of water from 105° to 120° F. As a tonic he gives

℞ Ferri et potass. tart..... 6.0 (℥iss)
Aloes socot..... 1.0 (gr. xv)
Ext. absinthii.....
Ext. artemisiæ.....aa. 2.0 (gr. xxx)
Ol. anisi..... 0.1 (gtt. iij)

M Ft. pil. No. 50. Sig., two after each meal.—*Journal de Médecine de Bordeaux.*

Intestinal Antiseptic.—

℞ Betanaphtol ..... 3.0 (gr. xlv)
Chloroform ..... 0.03 (gtt. xv)
Ol. ricini.....90.0 (℥iij)
Spt. menth. pip..... 0.02 (gtt. v)

A tablespoonful for an adult in port wine, beer, or sweetened black coffee; for a child, a teaspoonful.—*Journal de Médecine de Bordeaux.*

Whooping-Cough.—R. A. Lancaster recommends

℞ Tinct. belladonna...16.0-24.0 (℥iv-vj)
Spt. frumenti.....30.0 (℥i)
Phenacetin .....10.0 (℥iiss)
Fl. ext. castaneæ foliæ .....ad. 180.0 (℥vj)

M. Shake before using. From ten drops for a one-year-old child to a teaspoonful for a ten-year-old child every two to six hours.—*Jour. Amer. Med. Assoc.*

Inflation of the Middle Ear.—This, according to A. H. Buck, serves to push a drum membrane back to its normal position, and to give a kind of massage to the Eustachian tube and middle ear. There are three methods of inflation: (1) That of Valsalva, in which the patient holds the nose and distends the cheeks. It always makes congestion and may cause rupture of a small vessel in the ear, especially in old persons. (2) The Eustachian catheter, which is unpleasant to the patient, and by its hardness may irritate the Eustachian tube and retard the cure. (3) Politzer's method, in which a large rubber bag is connected with one nostril by a rubber tube and nose-piece. The patient is told to swallow, and as the thyroid cartilage rises, the bag is suddenly compressed. In the act of swallowing, the soft palate closes the pharyngeal opening of the nose, and at the same time the Eustachian tube opens, so that a maximum effect upon the ear is obtained.

Diuretic.—For an agreeable diuretic and to alkalize the urine, Peabody recommends that two solutions be kept on hand, as follows:

No. 1. Potass. acetat..... 25.0 (℥viss)
Potass. bicarb..... 12.0 (℥iij)
Aquæ .....ad. 240.0 (℥viij)
No. 2. Ac. citrici..... 10.0 (℥iiss)
Aquæ .....ad. 60.0 (℥ij)

Dilute with 60 ccm. (℥ij) of water 15 ccm. (℥ss) of No. 1-4 ccm. (℥j) of No. 2 and give in twenty-four hours.

Orthoform.—In nose and throat work, the reports of the use of this drug have been almost universally favorable. Brocq, however, has found orthoform sometimes irritating, and capable of exciting hyperemia and pruritus. In one case, a one-to-forty ointment caused swelling and redness lasting three weeks. Asam reports nine cases in which it produced inflammation, and Miodowsky observed a case of moist gangrene following the application of a five-per-cent. ointment.—*Year-Book of the Nose, Throat and Ear.*

Dislocation of Shoulder.—The rare backward dislocations of the humerus are best reduced in the following manner: The arm is raised to a right angle or the horizontal, extended, rotated, and then adducted, while at the same time the head is forced into the glenoid cavity by direct pressure from behind. If this is not successful, reduction is sometimes accomplished very easily by strong abduction of the arm with subsequent rotation inward, or by elevation of the arm and pressure of the head into the cavity.—*Tillmann's Text-Book of Surgery.*

Iodides in Locomotor Ataxia.—Roux, in a recent work on the sensory visceral derangements in tabes shows that iodide may irritate the stomach, alter the mucosa, and cause gastritis, with serious consequences. The pain is felt in the lower thorax, especially the left side, and may be severe; it is felt an hour or two after eating, increases gradually, and then disappears before the next meal. Vomiting may ensue, and persistence in the iodide may finally produce typical gastric crises. These are distinguished from true crises by their gradual onset and disappearance, by their development after gastric irritation or at the menses, and by their suppression with a milk diet and discontinuance of the iodide. —*Journal of Nervous and Mental Disease.*

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THE ETIOLOGY OF YELLOW FEVER.

A new and fertile field for research made possible by the brilliant work of Ross and the Italian observers in connection with the theory of the propagation of malaria by the mosquito has recently been further extended by four American investigators, Reed, Carroll, Agramonte and Lazear (*Philadelphia Medical Journal*, October 27, 1900), to yellow fever.

The mosquito as a factor in the propagation of yellow fever is by no means a new conception; as far back as 1881 Carlos Finlay of Havana ingeniously discussed such a relationship. Since then it has been revived from time to time by various writers, but, until the researches by the American writers just named, no definite investigations have been undertaken.

Reed and his co-workers were able to study the effects of the bite of the *Culex fasciatus* Fabr. upon 11 non-immune individuals with 9 negative results to infect and 2 positive results. Based on these results they feel justified in the conclusion that the mosquito serves as the intermediate host for the parasite of yellow fever, and that it is highly probable that the disease is only propagated through the bite of the insect.

To a critical reader, it must be confessed, however, that the conclusions, *in toto*, are scarcely supported by the evidence presented. The number of unsuccessful results, and the possibility of other modes of infection hardly seem to be taken into any consideration. Moreover to conclude that the disease is only transmitted by the bite of the mosquito appears to us a veritable *tour-de-force* of the imagination; in the first place they fail to bring forward enough clinching evidence to make the demonstration wholly conclusive, to say nothing of the fact that they have excluded no other possible mode of transmission. At most it can only be said that the work presented does little else than prove suggestive for what may be one important mode of transmission.

Another part of their investigation relating to the presence of the *bacillus icteroides* (Sanarelli) in yellow fever cases is equally full of interest. Contrary to a number of favorable results by some careful workers these observers believe that the *bacillus icteroides* stands in no causative relation to yellow fever, but when present should be considered as a secondary invader in the disease. For our own part, considering the excellent work done on both sides of the question, we would prefer to regard the matter still *sub judice*.

A NOVELIST'S VIEW OF MEDICINE.

Ouida, that wise lady with the manlike mind, whose books many of us admire for their brilliant versatility, has lately launched a most unexpected diatribe against physicians and scientists in the *Humane Review*. It reads as though an incensed comet, whose tail a grave astronomer was endeavoring to measure, should say, "Cruel brother of creed-makers, you, who would measure my tail and express it in a formula, behold, I will measure its length upon your narrowing instrument," and with one sweep should smash his good telescope, and sail away thinking how smart it had been.

According to this article, the physician deliberately cultivates in mankind a terror of disease which renders him an easy prey to it and incidentally fills the physician's pocket. More deadly than the propaganda of the priest is the influence on the multitude of the scientist who "teaches men and women to see possible or probable death in every thing that approaches them," and leads them "to pass their whole existence in a stench of disinfectants." They are taught to "slink with fear of contamination from the rosy lips of a child and flee from the good-natured gambols of a merry dog."

Certainly it has been of some little value to disinfect after measles, to refrain from kissing a child with diphtheria, and to muzzle dogs that may have rabies. That narrowing cowardice, the deteriorating influence of which Ouida bemoans for the human race, does not work such ravages on the average human system as does any one of these curses which science has sought to mitigate. We are tempted to think that Ouida gets her science from the newspapers.

And then with an almost feminine lack of logic, she wants to know why the biologist and scientist do not lift their voices against war if they are really so anxious to save life, and concludes that it is only because the gold would not pour any faster into "the blood-stained apron of the licensed experimenter."

But Ouida knows something about medicine herself. She has had "personal experience of all the symptoms of 'angina pseudo-membranosa,'" and has several times seen a physician diagnose a disease as that, when she knew it was not that at all. We think we understand. Some professional man has not been duly impressed by her grasp of scientific subjects; may have intimated that "a little learning is a dangerous thing" or may have explained in a manner calculated to enlighten ignorance something that she knew perfectly well. What could be more odious? And what more natural than that biologists, scientists and physicians the world over should have their egoism and masterful exaggerations pricked by her forceful and discriminating pen!

THE BACILLUS PYOCYANEUS IN HUMAN PATHOLOGY.

Considering the important position that clinical bacteriology has assumed in the last ten years in its relation to practical medicine, it is surprising that more definite knowledge has not come to hand concerning a series of infectious processes incited by a group of organisms for a long time regarded as harmless to the human body. Of the whole number of bacteria belonging to this class, no single one possesses the same varied interest as the bacillus pyocyaneus. The history of its experimental achievements alone embodies some of the most absorbing themes of bacteriology.

Since the publication of the admirable researches of Charrin on this organism in 1889, some attention has been directed to the study of its relations to certain morbid phenomena encountered from time to time in human pathology. Systematic bacteriological examinations—unfortunately still the exception rather than the rule at the hospital bedside and in the post-mortem room—have brought forward sufficient evidence to establish at least a causative relation to a series of pathological lesions in the human subject. Among those most prominent in elucidating this chapter of human infections may be cited Charrin, Maggiora and Gradenigo, Calmette, Thiercelin and Lesage, Lartigau and several others.

Like the more important members of the pus-producing group of bacteria, the bacillus of blue pus may incite a wide range of different and unrelated processes. The observations of Martha and Maggiora and Gradenigo fix its relations to certain cases of purulent otitis media. In cutaneous and subcutaneous inflammations it has been met with in human beings, causing gangrenous processes, suppurative phlegmon, vesicular eruptions and exfoliative processes. Among the more common of the lesions of the respiratory tract are bronchopneumonia and pleuritis. G. Blumer demonstrated the presence of this bacillus in practically pure cultures in a case of acute angina clinically simulating diphtheria. Except in instances of general infection the circulatory system usually escapes; the bacillus pyocyaneus has, however, been isolated from valvular vegetations of the heart. Judging from the number of cases reported, urinary infection with this organism is relatively common; until very recently ascending pyocyanic urinary infection has not been recorded. A report of three such cases has just been contributed by Blumer and Lartigau (*N. Y. Med. Jour.*, September 22, 1900). The urinary lesions were those of inflammatory hyperplasia.

One of their cases is of particular interest from the chain of nervous symptoms presented. These were partial paraplegia and exaggerated reflexes succeeded by complete paraplegia, loss of reflexes, anesthesia and analgesia. No demonstrable cord lesions were present to account for these phenomena. This symptom-complex is of especial interest, owing to its similarity to that described in a case by Jadkewitsch, arising from similar infection.

By far the best known infections are those which relate to the gastrointestinal tube; for the most part this type of pyocyanic infection has been most commonly observed in infants. These have been so thoroughly studied by Neumann, Cadet de Gassicourt and Lesage, that little seems

wanting in that direction. In these days when the etiology of dysentery is exciting considerable attention the rôle of the bacillus pyocyaneus in one or two epidemics has somewhat more than passing interest. In Cochin-China Calmette found this organism in dysenteric stools, but just how far it was etiologically concerned is somewhat uncertain. That it is capable, however, of inciting such a disease has been abundantly shown by Lartigau. His investigation of the epidemic at Hartwick, New York, in 1898, demonstrated the presence of virulent bacilli, in large numbers, in both the drinking water and stools of the affected individuals. Of the fifteen persons infected eleven recovered and four died.

That the bacillus pyocyaneus does enter the blood, giving rise to a general infection, there can no longer be any doubt. The clinical evolution of the *maladie pyocyanique* in man resembles, in a general way, the other better known forms of septicemia and some of the acute febrile diseases. The general symptoms are those of an infectious disease. Epistaxis has been observed; the spleen is enlarged, and the urine sometimes contains small amounts of albumin and casts. Intestinal disturbances occur with great frequency; diarrhea seems to be the rule. Cutaneous manifestations are very frequent and appear either in the form of bullous eruptions or petechiæ; more rarely is the papular rash observed. The picture thus often simulates typhoid fever. Death occurs in from forty-eight hours to five days or more. The post-mortem examination shows vasomotor disturbances, focal necrosis, hemorrhages, and lesions of the parenchyma of the heart, liver, spleen and kidneys. Intestinal ulcers are common, especially in the less acute cases, and rarely involve more than the mucous membrane. Hemorrhagic enteritis may exist.

ECHOES AND NEWS.

NEW YORK.

The Tarrant Catastrophe.—The frightful explosion of chemicals which shook lower New York City, Monday noon, destroyed a score of lives, completely wrecked two business blocks, and caused scenes of terror never before witnessed in the metropolis, was at first believed to have wiped out of existence two of the oldest and most widely known makers of proprietary medicines in the country, Tarrant & Co., in whose new and substantial seven-story building the accident occurred, and M. J. Breitenbach & Co., whose main office and store-rooms were in the same block. It was soon learned, however, that all of the members of the two firms, and all but one of the employees had almost miraculously escaped with their lives. The details of the terrible occurrence have been made familiar through the daily press, but the following statements as to the condition of the companies will be of interest to the medical fraternity. They were made to the Medical News by Mr. Thomas F. Main, president of the Tarrant Company, and by Mr. M. J. Breitenbach.

Mr. Main said: "In the present confusion we cannot state our plans definitely, though we are straightening out matters as rapidly as circumstances will permit. We expect not only to continue the business, but to begin filling orders regularly within a few weeks. Should we fail to recover any of our books and papers we shall of course be greatly handicapped, but in any event we believe that the delay in resuming shipments will not be protracted." His explanation of the three explosions was: "They were caused by the mixed vapors and gases from the large quantity of chemicals stored in the building, which had been liberated by the fire and the smaller explosion. We had no nitroglycerin."

Mr. Breitenbach said: "We shall resume business at once. We are so situated financially that we do not need to wait for the adjustment of the insurance. That there will be some confusion and delays is unavoidable, but we do not anticipate that they will be serious."

Both companies are occupying temporary quarters at No. 68 Murray Street, New York City, where all correspondence should be addressed until further notice.

Herbalist Practised Medicine.—Cornelius Edisan, a botanist of Richmond Hill, L. I., was held in $500 bail last week in the Lee Avenue police court, Williamsburg, pending a hearing on the charge of practising medicine without a diploma. He is sixty-three years old and well known in Queen's County.

New York's Prison Population.—According to the report of the State Prison Commission, in process of preparation, there has been a net increase of only six prisoners in the State prisons, county penitentiaries, the Elmira Reformatory, and the reformatories for women during the year ending September 30th. The decrease in inmates of prisons and reformatories throughout the State since 1895 is 2615.

Flushing Hospital.—The Flushing Hospital may soon close its doors because of lack of funds to support it. The hospital authorities have issued a statement, showing that it costs $14,000 a year to run the institution. The city gives the hospital $6000 and about $3000 is derived from pay patients. This leaves a balance of $5000 to be raised by subscription. The trustees of the hospital have appealed to the citizens of Flushing to save the hospital.

New York's Death-Rate.—Dr. Henry Dwight Chapin, Chairman of the Committee on Hygiene of the Medical Society of the County of New York, in his annual report, which is just out, among other items, says: "There is happily no special feature to record in reference to the public health of New York City during the past year. The deaths from diarrheal diseases, gastro-enteritis and enteritis may be considered as a fair index in the relation to the general death-rate of the general health and sanitary condition of the community. During June, July, August and September of 1900, 2692 deaths were reported from these causes in the boroughs of Manhattan and The Bronx. This does not represent an unusual number, in comparison with previous years, in spite of the great and continuous heat of the past summer. . . . The general death-rate during 1899 was 19.8 per thousand (it was 20.5 in 1898) and there has been a tendency to a lower death-rate during the past few years. This may be accounted for by a lessening of the virulency of influenza, by better paving of streets, and a more careful oversight of water and milk supply." Dr. Chapin calls attention to what he considers the immediate necessity of taking steps to increase the city's water supply and quotes extensively from the Merchants' Association report on the New York Water Supply. The subject of pure milk is also considered.

PHILADELPHIA.

Anthrax from Fly-Bite.—Michael Bednovick, a tanner of Williamsport, is suffering from anthrax. The disease developed from a fly-bite on the man's arm, the fly presumably having come from diseased hides about the place.

Diphtheria Still Prevalent.—The Haverford College Grammar School has been closed for ten days, although but one case of diphtheria had developed. During last week 119 new cases were reported in the city, one Sunday School being closed to prevent the spread of the disease.

Nurses Graduate.—A class of six nurses was graduated from the training school of the Children's Homeopathic Hospital October 30th.

Death at Advanced Age.—The death at Pittsburg of the oldest man in the State is announced. He was a negro and was proven to be 116 years of age.

Honor for Dr. Lee.—Dr. Benjamin Lee, President of the State Board of Health, was elected president of the American Public Health Association at its recent meeting in Indianapolis.

Filters in Progress.—The residents of Manayunk and Germantown will be the first to get filtered water. Work on five filter-beds, each half an acre in area, is to be begun at once and will be completed in six months. The capacity of this plant will be 6,000,000 gallons daily.

Suspected Foul Play.—Poisoning having been suspected in the case of Dr. Geo. W. Bull who was buried some time ago, the body has been exhumed and the viscera removed for examination. Dr. John Marshall, of the University of Pennsylvania, is to conduct the examinations.

Obituary.—Dr. M. J. Grier died suddenly October 28th of stomach trouble, aged sixty-three years. He was one of the pioneer specialists in nervous diseases and the first physician in this city to apply electricity as a remedy for nerve ailments. Dr. Grier also devoted some time to diseases of the throat and treated many famous singers. He was well advanced in Masonry.

Dr. Geo. A. Muehleck, who died October 24th of typhoid fever, was one of the prominent physicians of the southern section of the city although he was only forty years of age. During the past four years he has been pathologist to St. Agnes' Hospital.

Eucain Anesthesia.—On October 27th Dr. W. B. Van Lennep of the Hahnemann Hospital did an operation upon a case of inguinal hernia under anesthesia induced by injecting eucain into the spinal cord. The patient was a middle-aged white man and he stood the operation well, anesthesia being complete. It has been reported that Dr. Keen's case of October 3d was not successful because the patient afterward died. The death occurred three weeks after the operation, however, and was due to a condition entirely apart from the hernia which was operated on under the spinal anesthesia. Eucainization of the cord, therefore, was in no way responsible for the death of the patient.

Druggists Engage Counsel.—Only five of the many druggists arraigned here for violating the law by not properly displaying their certificates in their stores have paid their fines. The remainder have engaged counsel and will fight the matter in court. A mass meeting is to be held for the purpose of determining on concerted action. In Pittsburg it is claimed that "drug" stores which sell only liquors have been found. In others the detectives employed by the Pharmaceutical Board had prescriptions filled by soda-water dispensers. These actions should of course be stopped, but some of the suits brought against druggists in this city because their certificates were not hanging in the right place seem like persecution.

Honor for Dr. Stengel.—The Board of Managers of the Pennsylvania Hospital, at a meeting Monday afternoon, October 29th, elected Dr. Alfred Stengel visiting physician, to succeed the late Dr. Da Costa. Dr. Stengel is physician to the University and Children's Hospitals, director of the Pepper Laboratory at the University of Pennsylvania, professor of clinical medicine at that institution, editor of the "American Journal of Medical Science" and author of "A Textbook on Pathology." He was graduated from the University in the class of 1889.

CHICAGO.

Diphtheria.—On October 22d the Medical Inspectors closed four rooms at the D. S. Wentworth School, on account of diphtheria among the scholars, and one room at the McCosh School on account of scarlet fever.

Indicted by Federal Jury.—The names of James Armstrong, Thomas Armstrong and John H. Randall, officials of the Metropolitan Medical College, known as a diploma mill, are included in one of the 65 true bills returned by the Federal Grand Jury in the United States District Court.

Public School Medical Inspection.—Last week 2521 pupils were examined by medical inspectors, and of these 184 were found to be suffering from contagious or infectious diseases. In the Board of Health account the other day of the October weekly mortality, attention was called to the fact that during the twenty-five school days since September 7th, the inspectors have examined 9770 ailing children in the public schools, and 694 of these were found to be suffering from contagious diseases liable to spread to other pupils with whom they were in the close contact of school attendance. Among these were sixteen cases of diphtheria, 17 of scarlet fever, 17 of measles, 30 of whooping-cough, 36 of chickenpox, 126 of tonsillitis, 65 of mumps, 13 of purulent sore eyes, 123 of impetigo contagiosa, 145 of pediculosis, 25 of ringworm, 24 of eczema, and 47 of other contagious diseases. These facts and figures establish beyond question the utility of medical inspection as a department of school work and administration.

GENERAL.

Resting Position of Anopheles.—Messrs. Sambon and Low state (*British Med. Jour.*, Oct. 20, 1900) that the generally accepted view, first enunciated by Ross and Austen, that the resting position of Anopheles is sufficient to differentiate this genus from Culex, is not true.

Obituary.—Dr. Moses C. White, eighty-one years old, for years professor in the Yale medical school and for the past fifteen years the Coroner's medical examiner for New Haven, died at midnight, October 25, 1900. He was born in Paris, Oneida County, New York State. He was a graduate of Wesleyan University and of the Yale medical school. He was a missionary in China from 1847 to 1852.

Dr. Alexander H. Johnson, a member of the Board of Health of Newark, N. J., died very suddenly October 26th, at Indianapolis, of heart failure. He was a delegate in attendance at the National Convention of the American Public Health Association.

Sir Henry Ackland, Regius Professor of Medicine in the University of Oxford, died in Oxford October 16th. He was born in 1815 and for sixty years has been closely identified with the life at Oxford.

Medical Students in Italy.—The *Supplemento al Policlinico* of September 15th records that 6648 students were studying medicine during the past academical year in the Italian Universities. These were distributed as follows: Naples, 2209; Turin, 783; Rome, 530; Bologna, 504; Pavia, 496; Genoa, 358; Padua, 309; Palermo, 270; Florence, 260; Pisa, 218; Modena, 152; Catania, 167; Parma, 175; Messina, 128; Sienna, 81; Cagliari, 75; Sassari, 54; Camerrio, 30; Perugia, 29; Ferrara, 15.—*Lancet.*

Dr. Potter Resigns.—Dr. Samuel O. L. Potter has resigned from the Board of Trustees and from the Chair of Theory and Practice of Medicine and Clinical Medicine in the College of Physicians and Surgeons of San Francisco, and has severed his connection with that institution, of which he was one of the incorporators.

Sickness in Philippines.—The report of Surgeon-General Sternberg, U. S. A., says that the present force of the Medical Department consists of 192 officers, which he says is not enough, in view of the large number of coast-defence stations and the troops operating in Cuba, Porto Rico, Hawaii, and the Philippines. The contract surgeons have rendered excellent service, but the Surgeon-General thinks the corps should be increased. Reference is made to the good work the army nurse corps has performed. The medical statistics in the report relate entirely to the calendar year 1899, and nothing is given concerning the statistics for 1900. The Surgeon-General explains the conditions in the Philippines as follows: "The exposures, fatigues, and excitements of a prolonged campaign are responsible for the large sick report and the relatively large death-rate among the troops in the Philippines. However, the opinion is prevalent among our medical officers that in time of peace, and doing only garrison duty, the sick rate of the army in the Philippine Islands would be no higher than it ordinarily is in the Southern United States."

Assistant in Serum Therapeutics.—The United States Civil Service Commission announces that on November 20, 1900, an examination will be held for the position of assistant in serum therapeutics, Biochemic Division, Bureau of Animal Industry, Department of Agriculture. The examination will consist of the subjects mentioned below which will be weighed as follows:

1.	Letter writing (first grade)	10
2.	Elementary general chemistry	20
3.	Serum therapeutics	60
4.	Training and experience in laboratory work	10
	Total	100

Age limit twenty years or over. From the eligibles resulting from this examination it is expected that certification will be made to the position of assistant in serum therapeutics, Biochemic Division, Bureau of Animal Industry, Department of Agriculture, at a salary of $720

per annum, and to other similar vacancies as they shall occur. This examination is open to all citizens of the United States who comply with the requirements and desire to enter the service. All such persons are invited to apply, and applicants will be examined, graded, and certified with entire impartiality and wholly without regard to any consideration save their ability as shown by the grade attained in the examination. Persons who desire to compete should at once apply to the United States Civil Service Commission, Washington, D. C., for application forms 304 and 375, which should be properly executed and promptly forwarded to the Commission.

OBITUARY.

DR. EDWARD R. SQUIBB.

A man whose service to medicine was unique has just died at the age of eighty-one years. Dr. Edward R. Squibb was a graduate of the Jefferson Medical College of Philadelphia, and began his medical career as a surgeon in the United States Navy. Some years later while he was acting as surgeon in charge of the Brooklyn Navy Yard Medical Station, the Civil War broke out, and he was called upon to make use of his knowledge of drugs for the benefit of the Government. His scientific knowledge and skill in the manufacture of pharmaceutical preparations was so great that he saw the need of an excellently equipped laboratory for the perfection of results. As the Government would not supply him with sufficient funds, he fitted up a private laboratory, resigned his government position, and began what has been one of the most valuable life-works that this country has known in the history of medicine, for it was medicine itself of which he was the master. A chemist and a physician he was, with all the keen desire of the true scientist to discover remedies and of the doctor to apply them to human ills. Instead of practising at the bedside with the drugs the names of which he had learned in his medical books, he studied the drugs themselves, chemically, physiologically, therapeutically, and sent them out to his brother practitioners in such form that the whole country, in fact, the profession of the round world, accepted his dictum, and made his name the standard mark for purity and accuracy in pharmaceutical preparations.

Dr. Edward R. Squibb.

His laboratories in Brooklyn have served for nearly half a century as models for all others. So far was he from being the mere manufacturer of medicines, as we to-day understand the term, that he never advertised. His work was recognized as the work of a man of genius for science; and physicians regarded themselves as middle men merely handling what his knowledge and skill had pronounced to be good.

An accident in an explosion in one of his laboratories many years ago nearly caused the loss of his life, at least, it was feared, of his eyesight. He recovered, however, with only a facial disfigurement, which perhaps led him to be more retiring than a man of his fame generally is. His works were widely known through his preparations and his scientific writings, but the man himself was known only to an intimate circle of warm friends. Among these, however, were many physicians who realized that the force and integrity of his character underlay the success of their own work.

He was a man of literary attainments, and of a keen critical ability. He was a member of the New York State Medical Association, the Kings County Medical Association, the Metropolitan Museum of Art, the Philosophical Society of Philadelphia, and many minor societies of kindred character.

For about ten years the active management of his great business has been in the hands of his sons, so that the name so familiar to physicians and pharmacists will, by virtue of the trust implied in it, continue to be worthy of the founder.

Plague at San Francisco.—Cases reported of the 5th and 10th of October have been confirmed by bacterial examination.

Plague from the Philippines.—Government inspectors report that the steamer Bon Lomond, which arrived in London on Friday, October 30th, from the Philippines, had a verified case of plague on board. The victim was removed to a hospital, and the steamer was disinfected.

Dr. Seymour Oppenheimer.—In our report of October 20th of the New York State Medical Association we printed Dr. Oppenheimer's name as Dr. Seymour.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, October 16, 1900.

OPENING OF THE MEDICAL SCHOOLS—INTRODUCTORY ADDRESSES—PROF. CLIFFORD ALLBUTT'S ADDRESS ON ABSTRACTIONS AND FACTS IN MEDICINE—THE SOUTH AFRICAN HOSPITAL COMMISSION—ARREST OF THE OUTBREAK OF PLAGUE IN GLASGOW—THE POLYCLINIC—MR. JONATHAN HUTCHINSON ON THE "ADVANTAGES OF CIRCUMCISION"—RELATIVE IMMUNITY OF JEWS TO SYPHILIS.

With this month of October the medical schools begin a new session. The usual crop of introductory addresses has sprung up all over the country and the medical journals are full of them. As I read these excellent productions, so lofty in tone, so full of good advice to those entering the profession, and, above all, so ambitious in their attempts to tell us what Medicine (with a big M) is, what are its limits, its position in the hierarchy of the sciences, its origin and development in the past, its possibilities in the future, and its services to humanity, some disquieting reflections arise. I have read these philosophical disquisitions year after year for many years, but the problems they discuss seem no nearer a solution. No progress is made, nothing definite is established; we simply move in a circle. Is medicine a science or an art? Is there any truth in the alleged opposition between theory and practice? These are questions which still can be discussed *ad infinitum*. But in the introductory addresses of this year there is one which, by its originality, its boldness of thought, and its philosophical acumen stands out above the rest, and is worthy of attention—the address delivered by Dr. Clifford Allbutt at the Middlesex Hospital. In the application of all the sciences to medicine, that is to say, to a well-meant interference with the most complex and obscure of known machines, there is need, he said, not only of positive knowledge and the scientific habit of mind, but also of a large collection of approximate empirical truths or maxims, for a certain shrewdness and dexterity in the use of such imperfect means and for some insight into men. On the other hand, traditional lore may be handled too reverently; the very provisional nature of practical rules is apt to be forgotten. Every man, as Chateaubriand said, is two men, the man of his time and the man of all time; in some the former, in some the latter character prevails. In the present state of medicine Dr. Allbutt finds a wholesome tendency to the fall of diseases as abstract names and to the rise of the patient. Principles of causation and therapeutics are falling out of fashion and cautious "opportunist" uses of facts and tentative methods are taking their place. The iatromechanical principles of medicine were followed by the iatrochemical, by doctrines of stimulants, of antiphlogistics, of irritability, and so forth. It is to be hoped that physicians will become still more careful in reasoning in abstract terms, for every abstract term is such by virtue of more or less negation; so that a language void of much of its contents is, for purposes of rapidity, employed, just as in traveling by rail a knowledge of the country traversed is sacrificed for speed. There is no such thing as, say, "enteric fever" or "diphtheria;" these are not things but abstract conceptions, the realities being large numbers of individual patients, no two of whom are alike and many of whom are very unlike. If we persist in reasoning in abstract terms only our conceptions become hollow. Thus, in therapeutics volumes of empty stuff are written about tonics, alteratives, and so forth, which is but pasteboard knowledge. The remedy for this easy vice is reiterated and indefatigable reference of every abstract term to its supposed content of facts, and of principles and names of diseases to patients. Dr. Allbutt concluded by advocating the pressing need in all hospitals of clinical laboratories. Mere observation of disease and morbid anatomy have taken medicine almost as far as they can. To keep alive for a year or two a patient who is already in some part half dead is but a poor achievement. Morbid processes must be tracked out to their earliest dynamic initiation. The clinical laboratory of a county hospital should be the center of enlightenment to all the private practitioners of the district.

The South African Hospital Commission held its opening sitting at Kimberley on October 1st. The doctors and members of the hospital staffs agreed that the hospitals in the town were well arranged and equipped and that no complaints had been made. But the evidence of soldiers was directly contradictory. They complained of bad treatment owing to administrative incapacity. At Paardberg, they said, the field hospitals were so badly placed that men lay in pools of water. The camp at Maitland was in a similar position, the men lying in tents full of water, many without blankets, overcoats or oilskins. At Cape Town evidence was taken on October 4th. One of the hospital ships was described as filthy and the milk and food supplies as bad. The civil surgeon of the Tuli hospital complained that the authorities would do nothing. Horses, he said, were allowed to die and rot near the tents, and it was impossible to procure the necessary medicine. Three patients, including one Boer prisoner, died in consequence.

The progress of the plague in Glasgow may be considered completely stayed. No fresh cases have occurred since September 19th. The number of cases in the Belvidere Hospital remains at 21 with 2 still doubtful. Eight more persons who have been in contact with plague-stricken patients have been dismissed from the reception-houses, reducing the number of inmates to 6.

At the Polyclinic Mr. Jonathan Hutchinson de-

livered an important lecture on the advantages of circumcision. The most obvious advantage, he said, was cleanliness. This is important in childhood. In adults the habit of withdrawing the skin and washing the glans has usually been learned, though it is not practised sufficiently. In children it is not, as a rule, attempted; most boys would regard the attempt as indecent, and in many paraphymosis would result. Moreover, the practice would be injurious to morals; yet the accumulation of smegma and its decomposition is a source of annoyance and irritation to many boys. Further, any irritation of the glans penis is liable to produce reflex excitement of a character to be avoided. In middle life to many the possession of a prepuce is a source of more or less habitual annoyance. Seborrhea, balanitis, and herpes are common. As old age comes on the danger of cancer to those who suffer from phymosis is considerable. Similarly, circumcision tends to prevent syphilis. Mr. Hutchinson has found that, while gonorrhea is quite as common among Jews as among Christians, syphilis is much less so. This shows that it is not on morality that the comparative immunity of Jews to syphilis depends. The only possible explanation is the absence of the prepuce. It would be difficult to contrive an appendage more likely to facilitate the implantation of the syphilitic virus than the prepuce. No measure which has ever been proposed for the prevention of syphilis is as efficient as circumcision. Unlike other measures, such as the inspection of prostitutes, it has no collateral influence prejudicial to morality, nor does it offend the sense of decency. Finally, circumcision probably tends to increase the power of sexual control. The only physiological advantage which the prepuce can be supposed to confer is that of maintaining the penis in a condition susceptible to more acute sensation than would otherwise exist. It may increase the pleasure of coition and the impulse to it; but these are advantages which in the present state of society can well be spared. If in their loss increase in sexual control should result, one should be thankful.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

CEPHALOTRIPSY OF THE AFTERCOMING HEAD—UTERINE FIBROIDS—VAGINAL HYSTERECTOMY—POSTPARTUM HEMORRHAGE—TOXIC LARYNGEAL PARALYSIS—CAMP SANITATION—SMALL-BORE RIFLE WOUNDS.

J. H. Targett, at the British Medical Association meeting, held at Ipswich July 31 and August 1, 2 and 3, 1900, recommended as the sites for perforation of the aftercoming head the region behind the ear, and the suboccipital space. This operation is not infrequently attended by much difficulty, especially if the head is retained above the brim of a contracted pelvis and the lower segment of the uterus is imperfectly dilated. Perforation through the mouth then becomes almost impossible, and even the suboccipital space may be hard to reach. If the latter route is chosen the aperture is liable to be directed too much toward the foramen magnum, so that the exit of brain matter is impeded. Moreover the cerebellar fossa is alone opened, the larger part of the cranial cavity being practically shut off by the tentorium. Perforation behind the ear meets this objection, but it is important to work well above the root of the mastoid process, and this site is higher and more difficult to reach than the suboccipital region, at least in the cases of marked pelvic contraction. To avoid laceration of the cervix one blade of the cephalotribe should be passed into the aperture made by the perforator while the other blade is adapted to the exterior of the head. Experiments have shown that the best grip is obtained by inserting one blade into a suboccipital perforation, while the opposite blade is applied over the face. Assuming that the woman is in the lateral obstetric position and that the pelvis is flattened, it will be most advantageous to have the long axis of the head engaging the transverse diameter of the brim with the occiput uppermost, and if the occiput happens to be forward the head should be gently rotated in the required direction. The trunk must then be drawn forward as far as possible to give room for the application of the cephalotribe posteriorly. The advantages of this method are that the head is seized by its base in the chief anteroposterior diameter, that the most rigid part of the skull is thus effectually crushed or strongly flexed on the spine, that a very firm grip is obtained, and, lastly, that it is easier to apply the cephalotribe.

Some ten or twelve years ago Dr. Donald, of Manchester, published an able paper on the methods of craniotomy for cases of severe pelvic contraction. He recommended a preliminary podalic version and extraction of the body, then perforation through the roof of the mouth, and, finally, crushing and extraction of the aftercoming head. The advantages claimed were that the base of the skull was thoroughly broken up and that the head could be easily rotated into the best diameter and well fixed by traction. This advice is quoted by most writers on obstetrics, but the practice is not carried out in any of the large London maternities. Version after cephalotripsy is very rarely adopted.

Alban Doran said that the first question with relation to the natural history of the uterine fibroid is its pathology. Microscopically neither a fibroma nor a myoma, it partakes of the characters of each with those of the latter predominating, and hence approaches the uterine tissue more or less closely. This is affected by ergot, hence ergot has been used for fibroids, acting then because the structure is rather uterine than myomatous. Although nobody would think of curing a fibroma of the periosteum with drugs,

ergot has been of much value in these uterine neoplasms. But the association of them with cardiac lesions often contraindicates its employment. A second important factor is the relation between the ovaries and these tumors. Notwithstanding the long painstaking research in Germany, no one can claim to understand all about normal menstruation nor much about the relation the ovary has on the growth of fibroids. But clinical experience shows us that in some cases the removal of both ovaries is followed by a reduction in the size of the tumor. Failure of this result has shown merely that it is not an essential sequel and leaves us in doubt as to whether all of the ovarian tissue has been ablated. The ovarian ligaments often contain sufficient gland-tissue to account for a certain number of these failures. In fact the speaker recalled successes when gland-substance was known to have been unavoidably left behind. Another fact associated with fibroids is bleeding. We do not understand why in many there is much hemorrhage, while in many more there is none. But until menorrhagia and metrorrhagia are themselves better understood independently of fibroids little surprise need be felt. The question of the rate of growth of these offenders is never surely answered, as all degrees are encountered. Upon menopause their effect seems one of delay, often by several years; while they do not perhaps really cease to grow, they rarely give trouble after the climacteric. As to treatment, enucleation of the small fibroid, hysterectomy where this cannot be done, and electricity in a few cases sum up the matter. Medicines, except for some of the symptoms, do not do much good.

M. A. D. Scharlieb stated the limitations of vaginal hysterectomy to be in cancerous disease (1) local extension of the process beyond the uterus; (2) infection of the pelvic, iliac lumbar and other glands; (3) metastases in distant organs, as lungs and liver; (4) concomitant disease of the body as diabetes and nephritis. Unless respect is had for these points the statistics of the operation will suffer and the ultimate results in given cases will not be satisfactory. Duty to the patient, to ourselves and to the operation demands careful survey of all these considerations. Of thirty-five cases tabulated from the records of the New Hospital for Women in London four died within one month after the operations, one of kidney disease, one of shock from a too long and difficult operation, and two of sepsis. Due review of all conditions would probably have avoided each.

John W. Byers classes all postpartum bleeding as of three kinds, due either to uterine atony with patent vessels at the placental site or to wounds of the parts of the parturient canal without any uterine inertia, or to both combined. The onset of a severe hemorrhage may be expected (1) when there is a history of it during previous confinement; (2) with uterine relaxation due to too frequent childbearing; (3) with ill health due to too little exercise and overfeeding; (4) with great mental depression, as at the death of the husband; (5) with the circulatory excitement late in pregnancy; (6) with overdistention of the uterus in twins and hydramnios; (7) with tumors of the uterus preventing contraction; (8) elderly primiparæ; (9) preexisting metritis; (10) albuminuria; (11) short, jerky pains, with intervals between them longer than the pains themselves; (12) short, rapid pulse, rather jerky and of low tension. The prophylaxis which should be adopted in all deliveries consists in the proper management of the third stage of labor and in the principle never to deliver in the absence of true uterine pains. The placental stage of labor consists of two factors, the separation and the expulsion of the afterbirth. Nature herself usually performs the separation perfectly and often adds complete expulsion, but the latter is the step in which the accoucheur is called upon to render assistance. The signs of the freeing of the placenta naturally are so definite that every practitioner should know them and be in that way prepared to avoid attempting to separate them himself directly risking retention of membranes, sepsis and postpartum hemorrhage. The details of the placental period of delivery may be reviewed thus: As soon as the head of the child is born, the left hand of the accoucheur grasps the fundus, the ulnar border being apposed to the vertebral column of the mother, and during the balance of the delivery the hand never leaves the uterine fundus. If the child is asphyxiated, or for other reason, the nurse may follow the fundus down. The hand remains in contact with the uterus throughout in order to perceive the separation of the placenta, but no massage of the organ should be indulged in at these periods. The separation of the placenta is shown by these indubitable signs: (1) A sudden rising up of the uterus which may have been largely in the cavity of the pelvis; (2) a swelling in the lower uterine segment bulging over the pubic symphysis much like a distended bladder, with which it has often been confused; (3) greater mobility of the uterus; (4) expulsion of a few more inches of the cord, shown by the advance of the ligature which, after a slight pulling on the cord to straighten it in the vagina, was placed close to the vulva. After the separation is thus manifest, expulsion occurs naturally or by pressure on the fundus after Credé's method. Examination of the afterbirth should now be made for fragments of it or of its membranes or for placenta succenturiata retained. The massage of the fundus may now be begun, when the cavity is manifestly empty. The other important step in delivery is never to empty the uterus in the absence of pains, but rather by sedatives secure rest for the mother and wait for the contractions to appear again. When from history and other facts hemorrhage is to be expected, the prophylaxis to be maintained is rigid and sensible hygiene throughout pregnancy and slow, careful

delivery. Chloride of calcium, thrice daily, for a few weeks before confinement may be of value. The treatment of the actual hemorrhage is foremost to have at hand all the necessaries for this often unexpected trouble. The means are uterine massage, copious, hot, sterile-water intrauterine injections, cleaning of the cavity of membrane and placental shreds, bimanual compression, and firm gauze tamponade. The Vienna school recommends drawing the uterus far down into the vagina or even everting it, in order to close the sinuses and kink the arteries. Injections of styptics, especially of perchloride of iron, are not safe. Hemorrhage from tears of the parturient canal requires suture, ligature and tamponing according to circumstances. The after-treatment in all cases is stimulation, intravenous infusion of normal salt solution, subcutaneous injections and high rectal enemata of the same. Later come good food and tonics.

P. W. Williams recited the common causes of toxic paralysis of the larynx as being grouped, either as infective neuritis commonly occurring in the course of a diphtheria, less frequently in typhus fever, typhoid fever, scarlatina, morbilli, influenza, rheumatism, tuberculosis, syphilis, cholera and malaria, or as tonic neuritis most commonly due to lead-poisoning, also ascribed to arsenic, copper, antimony, phosphorus, alcohol, atropine and morphine. The treatment of these conditions consists in the proper management of the original infectious disease and of elimination of any known poison. Locally galvanism and faradism and if possible strychnine, otherwise strychnine systemically, intubation or tracheotomy to relieve dyspnea due to bilateral abductor paralysis, especially common in diphtheria and typhoid fever.

Major James stated, in discussing the subject of sanitation in camps, that the conditions of camps are so various and depend upon so many circumstances that there are few points of detail that apply to all. The objects to be kept in view are: (1) Protection of troops from weather and climate. (2) Feeding them, and preventing disease communicated by food. (3) Disposal of excreta and refuse. (4) Prevention of local and endemic disease. (5) Prevention of spread of communicable diseases. The possibility of properly carrying out sanitation must depend upon several circumstances: (1) Choice of site; whether this is governed primarily by strategic or hygienic considerations, and whether the first consideration is to make it a defensible or healthy camp. (2) Whether the camp is a standing or temporary one. (3) Whether the supplies can be obtained locally, wholly or in part, or whether the transport is sufficient to make available plenty of food, tentage, and stores. (4) The climate. In any case the art of camping is one which depends upon ingenuity, and the longer troops are in the field the better accustomed they become to making themselves comfortable. The following remarks apply to camps where some stores are locally obtainable, and the class of country—China and South Africa—where British troops are now and may be shortly engaged. The primary essentials for properly carrying out measures of sanitation in camp are discipline and intelligence among occupants, and an efficient and well-instructed sanitary staff. It is to be remembered that while troops are doing hard work under exciting circumstances they are generally fairly healthy, and that it is when they are idle or when the excitement is passing that they become sick. Water supply is one of the most important things to supervise, and most of the commonest camp pests in the shape of enteric fever, dysentery perhaps, and cholera, are waterborne. The distribution must be as closely watched as the origin, and this in camp is a great difficulty. When men are thirsty they will drink anything and anywhere. He believes something could be done by education to restrain a man at ordinary times, but when the weather is hot and water scarce reason has to give way to impulse. If, however, water is plentiful and good and obtained from a stream, a spot above the camp should be marked for drinking; lower down for horses, and lower for bathing and washing clothes. The point of obtaining the drinking water should be policed, and the stream above as well as the area draining into it put out of bounds.

Clinton Dent said that, broadly speaking, in the South African campaign bullet wounds had done extremely well. Remarkable recoveries were numerous and many badly wounded had been able to return to duty. Amputations were proportionately very few. These results were doubtless due to the small-bore, high-velocity ball and the great advance in field and base surgery.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held June 5, 1900.

The President, Frederick Peterson, M.D., in the Chair.

Exophthalmic Goiter.—Dr. Mary Putnam Jacobi presented a case of this disease treated by intestinal antiseptics. B. D., was first seen February 8, 1899, aged twenty-two years. She had been well until the age of twenty, when she began to work at a shop for making infants' clothing. She worked from eight until five on button-holes and feather-stitching. She began to suffer much from constipation, relieved by frequent purgation with licorice powder. At the end of a year menstruation ceased, *i. e.*, in July, 1897. Six months later the eyeballs began to be prominent; at same time there developed flushings of heat all over body, palpitations, headache and weakness, tremor of hands and feet, especially on rising in morning, frequent distress in stomach. In

the summer of 1898 constipation was replaced by chronic diarrhea. In February of this year she had a severe attack of diphtheria and was cared for at Mt. Sinai Hospital. On recovery from this she felt much better for a time. The thyroid gland was only moderately enlarged and appeared to be slightly larger in the morning at the time the tremor and diarrhea occurred. There was marked accentuation of both cardiac sounds over tricuspid, but not at mitral; no murmurs at heart, but systolic murmur at carotid; pulse 120; respiration 24. Sphygmogram regular, rapid, with normal dicrotism. Complaint of constant aching in upper dorsal region between shoulder-blades, region of columns of Clarke. An attempt at a complete milk diet rendered the patient very weak and miserable and increased the tachycardia to a point where the pulse could not be counted. The urine was examined by Bouchard's method twice during the winter, once in February and again in March. On the first occasion the toxic coefficient was .579, on the second, .712. The patient had been treated by various nervous and vascular tonics before she came under observation without material benefit. The ordinary line of medication was abandoned altogether and disinfection of the intestinal canal was practised. Various disinfectants were used at different times during a long period, bismuth salicylate and betanaphtol, associated with a daily flushing of the colon with two quarts of water. Under this treatment, especially the colon flushings, the diarrhea was arrested, the patient grew steadily stronger and the menstruation returned on April 15, 1899, after an amenorrhea of twenty-two months. The week before this appeared a third examination of the urine gave a urotoxic coefficient of 1.426, nearly double the toxicity found in March. For eleven months the pulse remained at 120. On April 21st the patient was feeling very weak, with much headache and anorexia, and the urotoxic coefficient was .388, the only time at which it was subnormal or any other than excessive. On March 27th, after an experiment with thymus gland, the coefficient was 1.662; menstruation occurred three days later. After this it was absent until January, 1900, when it returned and has occurred regularly ever since. The last urinary examination was made May 22, 1900, and the coefficient was then nearly normal, being .432. The pulse remained at 120 or over with scarcely an exception for eleven months, when, on January 24th, it became 100 and did not change in spite of an attack of diarrhea and insomnia. On February 7, 1900, the medication was changed to salicylate of soda of which from 60 to 80 grains a day were given. After ten days the pulse was 93; ten days later, 92; on April 4th, 90, June 4th, 90. An intercurrent attack of diphtheria, treated at home by muriate of iron, had the effect of lowering the pulse to 90.

In the discussion Dr. E. D. Fisher said that this case shows a very vascular condition of the thyroid gland. He did not absolutely agree with Dr. Jacobi in the use of intestinal antiseptics. He had found the continued use of strophanthin successful. That treatment might be carried out in a case of this kind. Dr. Wm. H. Porter treated two cases of a similar nature at his clinic by antisepsis of the alimentary canal, to prevent toxic infection, with better results than had been obtained under other treatment for that class of cases. Dr. Wm. H. Caswell said that glycero-phosphate of soda, 15 grains three times a day, had been efficacious in one case under treatment. The pulse has fallen from 130 or 140 to 84 or 88 and remained so for the past two months. All constitutional symptoms were very much improved, although the exophthalmus had not disappeared, nor was there any decrease in the size of the thyroid. The patient was better and was still doing well.

Dr. Jacobi spoke of the question of the urotoxic coefficient, although he said he had not paid any systematic attention to it. He had noted that when the urotoxic coefficient was in excess of normal, the patient was better. On one occasion it fell below normal and the patient was decidedly weaker, with symptoms of more constitutional poisoning, confirming the idea that poison circulating in the blood and excess of urine toxicity coexist with the effort of the organism to throw it out. When the toxicity is high, the patient is better; when subnormal, the patient is worse. This is approximate.

Congenital Hydrocephalus, Non-Inflammatory Type.—This case was presented by Dr. Joseph Fraenkel. He thought it worth while to bring the case as it seems unusual in its clinical pathology and he was in doubt as to the best diagnosis. The child, twenty-six months old, was born at full time without difficulties. Father aged thirty-six, mother thirty, Russian Hebrews, perfectly free from taint. Three living children perfectly well. One miscarriage prior to birth of this child. Immediately after birth it was noticed that the child was abnormal. It did not hold its head up and gave no evidences of mind or brain development. The symptoms became more accentuated. At no time has it walked, talked or shown any signs of mental vigor. Obstinate constipation has existed since birth. All examinations have given a negative result. There are no evidences on the skeleton pointing to rachitis. The upper and lower extremities are rigid; permanently contractured, but the contracture can be overcome and the reflexes are present. No ankylosis; reflexes not exaggerated as would be expected. The child vomits, and has had three or four general convulsions. After the last one the child lost its voice for three or four days. Sensation in so far as it can be examined is negative. The head is somewhat large, 46 anthropometers in circumference, although not so large as in hydrocephalic infants usually. The fontanels are not closed. Child was put on iodide of potassium and syrup and iodide of iron and was thought to improve, but objective examination showed no improvement.

Dr. Fisher agreed with Dr. Fraenkel's diagnosis of hydrocephalus, non-inflammatory type, congenital. One case which he had seen showed a congenital condition of interference of the circulation through the fontanels to the spinal cord. Dr. Jacobi asked if there might not be a correlation between the small head and the severity of the symptoms. For some reason the skull had not yielded, thus causing greater intercranial pressure than in ordinary cases where the skull is large and necessarily the pressure less. Dr. Lewis A. Connor said that the question of increased intercranial pressure can be determined by puncturing and the use of the monometer to measure resistance. A monometer may be improvised by using a bent glass tube with a short horizontal arm and a long perpendicular one, and attaching it by a piece of rubber tubing to the cranium. Dr. Peterson said that the fontanels being open would seem to show that there is not unusually great pressure. It does not look like congenital hydrocephalus. In that disease there should be an unusual growth of the head. He had seen this rigidity resulting from basilar hemorrhage occurring during labor.

Multiple Neuritis Following Pneumonia.—Dr. Connor presented this case. The patient, male, forty-one years of age, came to the Hudson Street Hospital on November 7th with a lobar pneumonia of five days' standing, with typical history and physical signs. The consolidation involved left upper and lower lobes and ran a normal course up to the point of deflorescence. Instead of clearing up at the end of the seventh or ninth day, the temperature dropped and the consolidation remained, presenting the ordinary picture of delayed resolution, lasting two weeks beyond the allotted period. During that time the patient gave no evidence of any other trouble. Just at the end of this period of consolidation, three weeks from the beginning of the attack of pneumonia, it was noticed that his legs were weak and that he had some discomfort in moving them and the left arm extensors were paretic. In the course of a week the following picture was developed: Extensive, almost complete paresis of the extensors of the leg, tibialis group and peroneal muscles, extensors of the left arm and slight loss of power in the right arm. No anesthesia. Some numbness of the tips of the fingers and an area of hyperesthesia over the crest of the iliæ on both sides. Almost no pain except girdle sensation. Tenderness over the calves of legs and arms very slight. Diaphragm was not moving properly and in about a week from the beginning of symptoms of paralysis, there was complete loss of function of the diaphragm, with either forced or natural respiration. It was a severe multiple neuritis which ran a course of five weeks before any improvement could be noticed. He can now walk about and has recovered very largely the use of his left hand. It was six weeks from time of disappearance of function in the diaphragm before the first contraction could be recognized. So severe a neuritis is very unusual in lobar pneumonia. It is recognized as a possible complication, but an unusual one, and in those cases personally observed the neuritis has been local or else of a mild type. The man's history is good as far as syphilis or tuberculosis is concerned. He has been accustomed to drink three or four glasses of beer or ale in the course of the day and, two or three times a week, a glass of whiskey. The picture has not been that of alcoholic neuritis, nor were the sensory symptoms less marked than they usually are in these cases.

Dr. Cunningham asked what was the state of the pulse during this attack. Was the vagus involved? Dr. Connor replied that it had remained normal. Only the pupils were involved. Dr. Cunningham said that in alcoholic neuritis the vagus invariably is affected several days before the diaphragm is involved.

Dr. Jacobi asked if it were supposed that there was any infection by continuity of inflammation from leg to the diaphragm, affecting the phrenic nerves. Dr. Connor said his idea was that it was purely a matter of toxemia, delayed resolution, long-continued condition of consolidation with the growth of the specific bacterium. This was a case of toxemia sufficient to produce this result, taken in conjunction with the damaged condition of the nerves from his alcoholic habit.

Dr. Peterson said that Dr. Connor's case was quite unusual; it certainly was one of simple multiple neuritis following pneumonia. The moderate alcoholism might not have been sufficient to produce neuritis, but the added toxic condition of the blood caused by the pneumonia was sufficient to bring it about.

Progressive Muscular Atrophy.—Dr. Caswell presented the case of a young woman, twenty-one years of age, who came to the Vanderbilt Clinic seeking treatment for weakness in the hands. She is a maker of artificial flowers. Five or six months previously her hands began to fail and she could not work so easily as before. On investigation it was found that from the time she was a young girl she had had difficulty in closing her eyes, and she did not smile and use her lips and mouth as other children did. She was not conscious of this and only complained for the past few months that her hands failed at work. Examination showed a case which in almost every particular conforms to the type of primary progressive dystrophy described by Landouzy-Dejerine—beginning in the face with no hypertrophy, the atrophy showing later in the upper extremities. The lower extremities were fairly well developed for a thin girl. The arms from elbows to fingers were not atrophied. From elbows to shoulders there was marked atrophy on both sides. Pectoral muscles about the triangles of the neck were decidedly wasted and fallen away. When the arms were turned backward the superior scapulæ going into the triangles of the neck can be seen on both sides; when the hands are put forward, the scapulæ are winged. This is due to the atrophy and weakness of the

lower portion of the trapezius and deltoid. The face is myopathic. The onset of this disease is very insidious. Until the patient notices something which interferes with daily employment or manual labor he does not seek treatment.

Dr. Fraenkel knew of a case which has existed for any number of years. It has been stationary for seven or eight years. Some additional symptomological movement may excite it, and the advance of the disease will be brought to the attention of the physician. One may find slight indication of paralysis of the face; the disease stops there without fresh clinical manifestations.

Dr. Caswell spoke of another case of this kind at the Vanderbilt Clinic which had progressed very slowly during the past five or six years. The changes in the face were very slight, but it was gradually growing worse; the patient does not notice it, however.

Dr. Peterson said that he did consider the Landouzy-Dejerine type very rare up to two years ago, rarer than the Erb juvenile form. Within the past two years he had seen four cases of perfectly typical syndromes. The history is usually indefinite except as to the eyes. Patients have never remembered being able to close the eyes. This led him to suggest that some cases occasionally met with, of bilateral lagophthalmus, might turn out to be this disease. Several years ago he thought this form a variation of the Erb juvenile type. Now he thinks it is a different syndrome with a different pathological basis.

Progressive Muscular Atrophy.—Dr. Leopold Stieglitz presented a man, thirty-three years of age, born in Germany, who came to this country four years ago; father died of heart disease; mother, one brother and four sisters living; knows of no similar trouble among them. He cannot state exactly when his present trouble began. Has noticed for some years weakness in the legs, inability to lift them properly from the ground, difficulty in walking, and that he tired easily. This condition became steadily worse. The patient was seen four years ago at Mt. Sinai Dispensary. Upon examination there was very profound atrophy of the peroneal group of muscles in both legs, no disturbance of sense, slight signs of reaction of degeneration. The case was entered as one of the peroneal type of progressive muscular atrophy. Last February the patient returned to the dispensary complaining of weakness in the arms. Examination then showed that in addition to the affection in the legs there was a very pronounced typical condition of progressive muscular dystrophy of the body. The atrophy involved also the gastrocnemius muscle of the calf and to a certain extent the muscles of the thighs. On both sides there was atrophy of the pectoral, hypertrophy of the deltoids on both sides, wasting away of the upper arms, typical drop-foot and atrophy of the lower extremities. The diagnosis was peroneal and juvenile types of progressive muscular atrophy or dystrophy. The electrical reactions, however, did not correspond to those one would expect in a case of this kind. They were normal in the upper extremities, absent entirely in the lower. The patient has winged scapulæ, protruding abdomen, kyphosis of the back; all indicative of progressive muscular dystrophy.

Dr. Fraenkel said that three types of dystrophy are shown in this patient. The remarkable feature is the absence of any heredity. This condition is unusual at so late an age. He is very flabby.

Dr. Peterson agreed with Dr. Stieglitz that it was the juvenile type. He thought that there was a marked distinction between the juvenile and the Charcot-Marie-Tooth forms. The two syndromes are not alike. One peculiarity is that the legs below the knees are affected. In this patient the thighs are affected as in the Erb-juvenile form. The pathology is the same in this case. It is not apparent why in the Erb-juvenile form other muscles than those of the shoulder girdle are not involved.

Dr. Stieglitz spoke of the unusual feature of the commencement of the disease in the lower extremities. He had looked up a number of histories and could find nothing that exactly corresponded with this case. The involvement of the lower legs was not so unusual, and in this case simply the muscles below the thigh sequence were involved. Atrophy of the muscles of the thigh is common in progressive muscular dystrophy. He thought that one should distinguish between the Charcot-Marie-Tooth and Landouzy-Dejerine types on account of the difference in pathology; one is a disease of the trunk nerve of the cord. The Landouzy-Dejerine type is purely myotropic. On that account one should not try to connect the two syndromes. The family history should be carefully investigated, for the statements of the patient are sometimes misleading.

Hereditary Cerebellar Ataxia.—Dr. M. Mailhouse presented this case. The patient, F. F., was admitted to the New Haven Hospital January 13, 1900, with the following history: Age, thirty-two years; single; birthplace, United States; occupation, postal clerk; father and mother living and well; has five sisters living all in good health. One sister died of pulmonary tuberculosis and another died in infancy of causes not stated. Mother's mother also died of pulmonary tuberculosis. A sister of his mother is at present an inmate of the Connecticut Asylum for Insane. Mother and father have had muscular rheumatism. Patient had scarlet fever and diphtheria at fifteen years of age. When a boy had rheumatism of mild degree. In 1887 had sunstroke which left him confined to his bed. No syphilis, alcoholism or tuberculosis. The history taken on his admission to the hospital states that the patient first noticed in 1887 a dragging of his toes on walking and that his shoes curled up and were worn at the toes; did not walk with a stamping gait and could direct his feet anywhere without trouble. Legs did not cross on walking.

On closing his eyes while standing was unable to keep his balance. Had no pain in the legs but considerable backache. Then his hands began to tremble (1888) and his legs shook on walking. These symptoms increased and he had to use two canes in walking in 1888; in 1889 he used a crutch and one cane, and in 1890, two crutches. Has lost 57 pounds in weight within the past ten years. Has headache off and on, not severe. He also states that when twenty-one years of age he noticed an inability to run; he could walk but when he ran his legs got mixed up as though they were playing cross tag with one another. For past four or five years erections have been incomplete, and one time had frequent urination.

Status Præsens.—A man above medium height, of good frame, but somewhat emaciated. A striking feature as he stands supported by his two crutches is the nodding tremor of his head which is aggravated by walking. There is marked asymmetry of the head, a flattening of the occiput and pronounced sloping of the forehead with considerable flattening over the left parietal region. There is some facial asymmetry also as evidenced by a greater prominence of the right supraorbital arch than of the left. The nose is directed toward the right and the left palpebral fissure is smaller than the right. His gait is markedly ataxic, but he is able to get about fairly well on a level with the aid of crutches, but loses his balance readily on attempting to ascend a step. There is absolutely no muscular weakness in his legs. The knee-jerks are present, but not exaggerated. There is no ankle-clonus. The Romberg symptom is present and he is supported with difficulty when he stands with closed eyes. There is no impairment of sensation of any one of the forms, from head to toe. His movements are quickly performed, jerky, as is observed when he attempts to touch the tip of his nose with the index finger, the eyes being closed. The ataxia of the upper extremities is much less evident than in the legs. His speech is noticeably affected, but changes, being at times scanning or staccato and at others characterized by indecision and unsteadiness in the muscles of vocal expression; it is decidedly an ataxic speech. The pupils react neither to light nor accommodation. There is marked lateral nystagmus and on looking upward a rotatory mystagmus; when the eyes are at rest there is no oscillation. There are no contractures and no scoliosis. The grasp of the hands is strong and the muscles of the arms show no loss of power. The pectoral muscles are wasted, otherwise no atrophies are present. There is no optic atrophy and no limitation of the visual fields, but he is myopic, requiring a lens of seven diopters. The superficial reflexes are present, the plantor being very active. Urine presents no abnormality. The handwriting is like that of a tabetic. A review of the symptoms reveals the marked ataxia of the whole muscular system without any paralytic phenomena. The case resembles Friedreich's ataxia in its mode of development and general appearance, but differs from the typical disease in its later onset, in retaining the knee-jerks, in the late and mild affection of the arms, in the loss of the ocular reflexes, and in the absence of contractures or paralysis; the man has been afflicted twelve years and there is no paralysis or contracture present. The question might arise as to its being a multiple sclerosis, but this affection can be ruled out by the mode of onset, it being ataxic rather than paraplegic, by the normal reflexes and sensory phenomena and the absence of intention tremor. Furthermore, the long duration of the illness without any paralyses, ocular or corporal, militates against such a diagnosis. The case was presented not as an argument in favor of the type of hereditary cerebellar ataxia, but rather as a clinical example of ataxia presenting such a symptom-complex..

Dr. Caswell said that in the form of ataxia described, the fundus is generally affected; there is more or less neuritis, the knee-jerks are increased, and in this way discrimination is made between cerebellar and ordinary ataxia.

Dr. Fisher thought the sunstroke may have had something to do with the condition. He remembered a case of sunstroke followed by symptoms of this type, resembling compound or multiple sclerosis, but not conforming strictly to either. Taking that as an etiological factor, there is ordinarily some meningitis, some change affecting the cortex of the brain leading to the ataxic symptoms. Also ataxia, incoordination of the muscles, spastic condition of the patient—a degenerative condition secondary to some such lesion as that produced by sunstroke.

Dr. Peterson had examined the man before the meeting and thought that the diagnosis lay between multiple sclerosis and cerebellar hereditary ataxia. He was inclined to think that Dr. Mailhouse is right in his diagnosis of cerebellar-hereditary ataxia on account of the pupilary condition—no reaction to light—and because he has more of an ataxia than tremor of the ordinary sclerosis type.

Dr. Wm. B. Pritchard asked if there was anything of note in the subjective history of this case with reference to vision, hearing, or persistence of vertigo or headache that added to the data. Dr. Mailhouse said there were no subjective symptoms at all, except backache and difficulty in manipulating the legs. He is strongly myoptic without optical strain.

Raynaud's Disease of Gangrenous Type.—Dr. Wm. H. Porter presented this case. The patient came to this country some years ago; for a year or so was a hod-carrier, then went into an iron foundry where he has since worked. Has a very pronounced alcoholic habit, uses tobacco to a considerable extent. In the middle of April he noticed that the fingers of both hands were very white and icy cold. This lasted for two weeks and was followed by superficial gangrene, discoloration and blackness of the four fingers of both hands, a little discoloration of the left ear, and a spot on the opposite ear. This con-

dition had lasted for ten days before he came to the hospital. He suffered intolerable pain and got very little sleep. The urine showed slight traces of albumin, a decrease in urea and pronounced amount of indican. The patient had a very high pulse and was given doses of nitroglycerin with strychnine and caffein to improve the circulation. Lead-and-opium dressing was applied and gave relief.

Dr. Pritchard said that this patient was under his care for three or four weeks. At that time the man had, in addition to the symptoms mentioned, extreme edema of the hand, extending beyond the wrist. He had almost the national combination of colors—blue finger-tips, red hand, white arm. He was not relieved by the lead-and-opium applications made in varying strength and by various local means. To him the patient admitted a rather gross alcoholic history and he was of the opinion that this was an etiological factor of some importance, possibly intensified by extremes of heat and cold to which he had been exposed. His sufferings were horrible. Opiates in moderate quantities to modify the intensity of pain were used. He had improved.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held Monday, October 8, 1900.

The President, Robert F. Weir, M.D., in the Chair.

Hydrotherapy in Typhoid Fever.—Dr. S. Baruch read this paper. He stated the only absolutely reliable statistics in medicine are those relating to the Brand method of treatment. Vogel's statistics at the Military Hospital in Munich covered a period of fifty years, and showed a reduction of the mortality from 20 per cent. under other methods to 2.07 per cent. under the Brand treatment. While this plan of treatment has been generally adopted in the hospitals of this country, it has not as yet met with its deserved acceptance in private practice. The success of cold bathing is due to its marked reduction of the lethal complications of the disease. With reference to the cold bath as a means of diagnosis, he said that any patient with a temperature of 103° F. for three days should be first sponged over the trunk and thighs, commencing with water at a temperature of 85° F., gradually reduced to 65° F. He should then be taken to the bathroom and given a bath in water at 90° F., lasting fifteen minutes. Four hours later the bath is to be repeated at a temperature of 85° F.; four hours afterward at a temperature of 80° F., and four hours after that at a temperature of 75° F. If in half an hour after the bath the temperature of the body is reduced two degrees it can be concluded that the case is not one of typhoid; but if in half an hour the reduction does not exceed one degree, the diagnosis of typhoid can be made. A tin bathtub should then be procured and placed by the side of the bed. Having described the manner of giving the baths, he said that if reaction is poor this can be efficiently aided by the addition to the bath of Nauheim salts, in accordance with the suggestion of Dr. Thomson. If for any reason the use of the cold bath is impracticable or inadvisable, various substitutes for this might be resorted to. It should always be borne in mind, however, that the more nearly the method of treatment employed approached the regular Brand treatment, the greater would be the prospect of success. He spoke of ablutions and then of affusions, and said that the latter may sometimes be advantageously combined or alternated with ablutions. Affusions were employed as long ago as 1795 by Curry of Edinburgh, and in the form of what was known as "slush baths" were used with excellent effect in the recent Spanish-American war. Having referred to the sheet bath and towel bath, he read a letter recently received from Dr. Hobart A. Hare of Philadelphia in which the latter described the ice-rub, as practised by him. It has this advantage over the tub bath, namely, that cold and friction can be applied to the great muscles of the back and thighs, which are great generators of heat. The aim of all cold-water methods, he went on to say, is not to depress, but to refresh, and, if properly applied, there will be no shock, no cyanosis, no chattering of teeth. Various procedures should be resorted to according to the varying conditions present. In a case of hypostatic pneumonia complicating typhoid, where there was cardiac adynamia due to sepsis he had used the wet compress with the most happy effect.

In the discussion of the paper Dr. Ransford Van Gieson of Brooklyn said that, after a very extended observation, he could safely say that there is no other method of treatment that in its results at all approaches the typical Brand treatment. Sometimes, however, it is impossible to overcome the prejudices of patients or their friends against the full cold bath, and then we have to resort to substitutes. One method that he has found very efficient is the use of rubber sheeting. This is arranged in the shape of a trough, and affusions made over the patient. He has also used ice-friction with excellent results, and, as it is very difficult to hold a piece of ice in the hand or with a towel, he has devised a simple spring clip, with a wooden handle, for the purpose. The ice should be passed rapidly over the surface.

Dr. Baruch said he does not claim that all patients can be saved by the Brand method, but only that it is, as statistics show, the best treatment that had as yet been found for typhoid; and, moreover, that no patient had ever been killed by the treatment when it was properly given.

Hypospadias.—Dr. Carl Beck read a paper with this title. He gave a brief historical résumé of the subject, and spoke particularly of the achieve-

ments of Dupuytren in remedying the condition. He then described his own special operation, which was first performed in May, 1897. Instead of forming a new urethra, he utilizes the urethra already existing. The *modus operandi* of the procedure is based on the great mobility of the structures of the penis and the expansibility of the urethra. He described in detail the technic of the operation and a number of modifications applicable to various conditions, and stated that the younger the subject the greater the dimensions that can be obtained in the urethra. Dr. Beck presented three patients who had been successfully operated upon—one of them being an infant only five months old.

Dr. John H. Branth referred to so-called hermaphrodism, and mentioned a case he had the opportunity of examining twenty-five years ago which had been pronounced by Virchow and other observers one of real hermaphrodism. This was a mistake, however, as the patient proved to be a male, and Dr. Branth stated his conviction that there was no such thing as a true hermaphrodite.

Dr. Beck then said that several years ago he presented at the Surgical Section of the New York Academy of Medicine a patient who was a true hermaphrodite, the condition being afterward verified by autopsy.

NEW YORK ACADEMY OF MEDICINE.—SECTION ON PEDIATRICS.

Stated Meeting, held Thursday, October 11, 1900.

Thomas S. Southworth, M. D., Chairman.

Muscular Pseudohypertrophy.—Dr. Sara Welt Kakles presented a case of this rare dystrophic disease. The patient is about six years old and the pathological condition was first noted some two years ago, but probably existed even before that and began between the second and third year. In the matter of treatment very little can be done. Something can perhaps be accomplished by prophylaxis. The disease is prone to run in families, and marriages between families in which tendencies to it exist should be discouraged. Children of parents in whose families cases of pseudohypertrophy have occurred should be carefully protected from trauma and from infectious diseases. Sometimes the course of the disease seems to be rendered slower by hydropathic remedies with electricity and massage, care being taken, however, not to irritate excessively the weakened nerves. In discussing the case Dr. Charles Herman said that young children who have suffered severely from rickets may sometimes be observed to raise themselves from the floor by climbing up on themselves, as do these pseudohypertrophic patients. The disease is said to begin at about the sixth year. Some weakness of the limbs has usually been noticed before this, however, and the disease probably begins much earlier in life than is thought.

Fibrinous Pericarditis.—Dr. Bovaird presented the specimens from a case of meningitis with many complications. The first symptom was a pneumonic patch in the left lung. Then a stiff neck was noted and a spasmodic condition in the muscles on the right side. Meningitis was suspected. After this had continued for a day the child died and the autopsy revealed a fibrinous pleurisy with an exudate over an eighth of an inch in thickness covering the pleura. There was a fibrinopurulent pericarditis, but the surprise of the autopsy was a thick exudation of purulent character extending all over the brain and cord. The pathological condition had evidently existed for several days at least, yet the first symptom of meningeal trouble was noticed only twelve hours before death. It is not unusual, however, for extensive nervous lesions to exist in very young children with very slight symptoms. It is a warning not to give too favorable a prognosis in children's ailments.

Symposium on Antitoxin.—Dr. Henry F. Koester, Medical Inspector of the New York Department of Health, read a paper embodying the conclusions formed after six years of experience with the antitoxin treatment of diphtheria. He said that his present attitude toward diphtheria is very different from that of ten years ago. Then diphtheria was a dreaded disease. Now he can be sure if he sees the case during the first forty-eight hours that it will be better in forty-eight hours. His present custom in suspicious throat affections is to give antitoxin and then make the bacteriological test for the disease. Should the test prove that the disease is not diphtheria no harm is done, whereas if the bacteriological examination is positive the disease is throttled at the very beginning

Antitoxin Dosage.—The dosage of antitoxin should be regulated rather by the extent of the disease and the length of time it has existed than by the age of the patient. Dr. Koester considers that 2000 units should be given to mild cases; from 3000 to 4000 if the uvula and tonsils are affected; from 4000 to 5000 if the nares are involved. All laryngeal diphtheritic affections must, of course, be considered as severe cases and must receive the higher doses. If the diphtheritic deposit on the pharynx fails to disappear, then the dose of antitoxin should be repeated, but not otherwise. In all septic conditions from 5000 to 6000 units of antitoxin should be given at once.

Extraoral Diphtheria.—It is often noticed in houses where children are down with diphtheria that other children suffer from nasal discharges or from eye discharges in which, not infrequently, diphtheria bacilli are found. An injection of antitoxin will at once put an end to the discharge and this therapeutic test is the best proof of the real origin of such discharges.

Technic of Injections.—Many people have the habit of making the antitoxin injections into the muscles of the back. This sometimes produces discomfort, however, and there is some slight danger, if the child should move, of the hypoder-

mic needle entering the pleura or injuring some of the internal viscera. If the injection is made into the gluteal muscles these objections do not hold. The child may be easily and firmly held in the requisite position by placing it across the knee with its legs between the doctor's knees. The injections in the gluteal region may be made so deeply as to leave no swelling, whereas in the back swelling remains for some time.

Immunization.—From 150 to 300 antitoxic units are usually given for immunizing purposes, but in tenement-houses Dr. Koester prefers to use from 300 to 500 units because of the insanitary conditions. He has immunized in all some 1800 cases. In 4 cases only did membrane develop in the throats of immunized patients within thirty days after the injection. In one of these true diphtheria developed on the thirtieth day. The membrane in the three other cases proved on bacteriological examination to be due to the streptococcus. Dr. Koester has had complications occur after the administration of antitoxin in but very few cases and then only an urticarial rash that lasted for a day or two.

Accessory Therapeutics—Certain local measures Dr. Koester believes should be employed in some cases. If an offensive odor is noticed dilute hydrogen peroxide should be thrown into the fauces about every hour with a syringe that holds about an ounce of liquid. The solution should be thoroughly neutral. If it is acid it will irritate the lips and is apt to make the inside of the mouth sore with the result that nutrition is interfered with. Where considerable membrane exists in the nose peroxide should be forcibly injected into the nostrils. During nasal injections older children should be instructed to keep their mouths open so that infectious material from the throat may not be forced into the Eustachian tube. In smaller children the mouth should be kept open by a gag if necessary. Internal medication in Dr. Koester's experience is not advisable. Chloride of iron and chlorate of potash disturb the stomach and fulfil no rational indications. The tonic effect of the syrup of the iodide of iron, however, will often be found to do good. Tonic treatment must be the rule. The child should be encouraged to eat as soon as the appetite begins to come back. It should be given anything that it likes—ice cream, for instance, will often tempt the appetite when everything fails. Dr. Koester has had one child practically kept alive for several days on beer. He does not recommend beer for children's dietary, but the incident shows what out-of-the-way material may prove of service. If the child refuses to eat or drink it is better to feed it through the nose by means of a stomach-tube than to resort to rectal feeding. Calomel inhalations have been recommended by many, but they do no good and are prone to salivate those in charge of the little patient. Steam prevents ventilation and the benefit it affords does not make up for the nuisance that it is. After intubation only water should be given for twenty-four hours, after which the greatest care should be exercised in the giving of food until the child becomes accustomed to swallowing it without allowing any of it to get into the lungs. In severe cases the heart will usually need some stimulation. The maintenance of the circulation will prove, too, a prophylactic against the development of bronchopneumonia. The itching of urticaria should be treated in order to avoid the restlessness which it induces. A mild carbolic ointment is the best for this purpose.

Quantity and Grade of Antitoxin.—Dr. William H. Park, Assistant Director of the Research Laboratory of the New York Department of Health, said that the tendency of the present day is to use large doses of antitoxin. In Boston doses which in New York would be considered excessive have been given without any bad effects resulting, although these have been carefully looked for. During the months of August and September alternate cases of diphtheria admitted to the Willard Parker Hospital, irrespective of the severity of individual symptoms, were treated with 1000 and 2000 units of antitoxin each. It must be borne in mind, of course, that antitoxin is not a drug, but a substance which neutralizes the diphtheria toxin. One thousand units is not a small dose. It is sufficient to neutralize the toxin in two liters of bouillon culture of a virulent diphtheria bacillus. It would suffice to protect 100,000 guinea-pigs against a fatal dose of diphtheria toxin. We wish, therefore, to use only the amount of antitoxin that will be sufficient to neutralize the diphtheria toxin present in the system of the patient. Antitoxin is a powerful remedy and its exact dosage would be an important therapeutic advance.

Statistics of Cases.—In all 93 cases admitted to the Willard Parker Hospital suffering from diphtheria died or were discharged during the months of August and September. As was stated, each second case received twice the dose of the preceding one, that is, 2000 units. There was no marked difference in the mortality of the two series of cases. It was found, too, there were no more complications after the larger dose of serum than after the smaller ones. Urticarial rashes were not more frequent and there were no joint or kidney symptoms that could be attributed to the antitoxin. There was some difference in the morbidity of the two series of cases. The symptoms did not clear up so fast in the case in which the smaller doses were given. There was also an impression produced that some of the fatal cases might have been saved if still larger doses of antitoxin had been given. At the Willard Parker Hospital the effects of still larger dosage, 4000 and 6000 and even 8000 units, have been compared. As the result the following conclusions seem to be warranted: In mild cases of diphtheria, seen during the first twelve to eighteen hours of the illness, give from 1000 to 2000 units; in moderately severe cases give from 2000 to 3000 units; in severe cases from 3000 to 5000; all laryngeal cases should be given about 5000 units. If there is no change in the symp-

toms repeat the dose in eighteen hours. Give the first dose at once if diphtheria is suspected. Do not wait for the result of bacteriological investigation. The patient's throat, rather than the temperature or general condition, should be the standard by which the dose of antitoxin is determined.

Quality of Antitoxin.—The serum of any trustworthy manufacturer should be used provided, of course, that it be fresh. With any serum rashes may occur and there seems to be at present no way of avoiding them, although there did seem some hope that the quality of antitoxin in this respect might be improved or that other ingredients in the serum besides the true antitoxin were responsible for the untoward effects and that they might be eliminated. A globulin has been extracted from diphtheria serum which contains all the antitoxic property, but which gives no more assurance of not causing rashes than does the whole serum.

Antitoxin in Boston.—Dr. John McCullum, Resident Physician at the Boston City Hospital, discussed the present state of opinion with regard to antitoxin according to experience in Boston. In 1890 diphtheria was the seventh on the list of fatal diseases in Boston's death-rate. In 1899 it was the sixteenth on the list. There has been since the introduction of antitoxin a marked and continuous diminution of the death-rate from diphtheria in the city. This is more noticeable than in any of the other large cities—Glasgow, Liverpool, Paris, Berlin, or London. Whereas the death-rate from diphtheria was over 35 per cent in 1881 it was only 10 per cent. in 1899. The death-rate of intubation cases in the Boston City Hospital has been reduced from 87 per cent. to 32 per cent. In the Willard Parker Hospital in New York the average mortality of intubation cases has been reduced from 85 to 52 per cent.

Large Doses of Antitoxin.—Much has been said about the dangers involved in the use of antitoxin. To some minds this is the main objection to its use. In a series of cases in the Boston City Hospital very large doses of antitoxin have been used, not only without producing any bad effect, but in reality saving patients from what seemed an inevitable fatal termination. Dr. McCullom then reported a series of cases in which from 30,000 to 60,000 antitoxin units had been used in the treatment of diphtheria. In one the child came in on the fifth day practically moribund; 4000 units were given at once and this dose was repeated every three or four hours for several days until 60,000 units had been injected. The patient recovered and suffered from no unusual complications. In a second case the patient was in the sixth day of the disease, a delicate child of only eight years, with an abundant mucopurulent discharge from the nose and a very disagreeable odor. Some edema of the face was already noticeable. In four days 40,000 units of diphtheria antitoxin were administered and the child recovered. A mild urticaria resulted, but the albumin that was in the urine when the child entered the hospital disappeared during the course of the injections of antitoxin. In this case some palatal palsy was noticed and an irregular heart action, but after a little time these disappeared. In a third case a pair of hypertrophic tonsils were completely covered by diphtheritic membrane which had also invaded the nostrils in the back of the pharynx. The treatment was not begun until the fifth day of the disease and 52,000 antitoxic units were given during the five days of active treatment. In a case brought into the hospital on the fourth day of illness and in which ordinary doses of antitoxin had had no effect, 35,000 antitoxic units were given in large doses at short intervals and improvement soon began, followed by ultimate recovery. In a fulminant case of diphtheria, seen for the first time on the third day, in which there was intense prostration and everything pointed to a rapidly fatal issue, 50,000 units of antitoxin seemed to bring the patient back from the verge of the grave.

Technic of Large Dosage.—No rule can be given as to the amount of antitoxin that should be given in severe cases of diphtheria. Beginning with from 300 to 500 units, the dose should be repeated every four to six hours until the diphtheritic membrane begins to shrivel, the odor of the discharge to modify, and a favorable reaction in the general condition sets in. No bad effects were noticed from these large doses, although the condition of the patient was carefully watched in order to obtain assurance on this point. Dr. McCullom has never seen a death from diphtheria where antitoxin was administered during the first twenty-four hours of the disease. If 4000 units of antitoxin are administered as soon as a suspected case is seen, the diphtheria will not last long and there will be no heart complications. It has been objected that antitoxin produced albuminuria. In over 600 cases the urine of diphtheritic patients was carefully examined for albumin. In no case was there an increase of the albuminuria so frequently present during diphtheria and in no instance did a suppression of urine occur after the administration of antitoxin. Where the antitoxin treatment was begun early there was always less albuminuria at a given stage of the diphtheria than would be regularly found in an untreated case.

Hospital Diphtheria.—One hundred and four cases of diphtheria have occurred in the Boston City Hospital in members of the medical or nursing staff since the introduction of the antitoxin treatment. In every instance the cases have been treated at once with antitoxin; there has not been a single death and recovery has been rapid.

New Bacterial Laboratory.—The contracts for the new laboratory of the city of New York for the study of the bacteria of plague and other infectious diseases have just been let.

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ORIGINAL ARTICLES.

SOME OBSERVATIONS ON ANESTHESIA BY INTRASPINAL INJECTIONS OF COCAINE.[1]

BY S. ORMOND GOLDAN, M.D.,

OF NEW YORK.

HAVING used the lumbar puncture and injection in over twenty cases, covering a variety of operations in general surgery, gynecology, and obstetrics, it is rather to be expected that, as an anesthetist, I would make comparisons of the new method with our general anesthetics, nitrous oxide, ether and chloroform.

That intraspinal cocainization would be superior to general anesthetics as administered in many cases, there is no doubt. That it is superior either in safety or advantages to our three general anesthetics properly selected and skilfully administered, I for one do not believe. My opinion is not based upon purely theoretical grounds, but upon a considerable practical experience in the administration of general anesthetics and an experience in the intraspinal method of anesthesia which, while less extensive than that of others, perhaps, is none the less thorough in the observations recorded.

While my results were at variance with others recorded in this vicinity, it has been a matter of satisfaction to find they were practically the same as those of the operators who first used the method for surgical purposes. I refer to Bier and Tuffier and, recently, those who at first questioned my technic.

It is my purpose to call attention to some salient features usually passed over by other investigators. First, it may be of interest to see the armamentarium complete. This consists of needles, aseptic solid piston syringe, one 120 m. graduate, small medicine glass for cocaine solution, test-tubes containing sterile cotton, forceps; sterile water in a tube covered by a sterile finger cot, effectually avoiding the loss of the fluid, at the same time keeping it uncontaminated; a small bottle of collodion, adhesive strips, a small piece of Arkansas oil-stone, alcohol lamp, powders of cocaine hydrochlorate, grs. 1¼ each, first wrapped in paper, then covered with foil and carried in a wide-mouth, glass-stoppered bottle large enough to hold about six. These are all tightly packed in a copper sterilizer, 8 x 6 x 2. I advise that they never be used for any other purpose.[2]

The needles should be neither too large nor too small in caliber. The attenuated needles and stylets devised by me are made of gold drawn, rendering them for this purpose second only to steel with none of the latter's disadvantages. The measurements are 8 and 10 centimeters respectively in length. External diameter of larger part, .9 millimeter. Internal diameter of larger part, .8 millimeter. External diameter of attenuation, .8 millimeter. Internal diameter of attenuation, .4 millimeter.

The attenuation, the essential part of the needle, is three centimeters from the point, which has a short bevel. It will be noticed that the measurements of these needles are smaller than those recommended by Tuffier. In no instance have I failed to obtain the cerebrospinal fluid nor have the needles up to the present ever become stopped up—it can readily be seen that were this to happen the stylets would very quickly and effectually clear them. Devices for causing a vacuum in the needles as they pass through the tissues are rather a disadvantage as they tend to draw foreign materials into them which would not ordinarily occur. The trocar and screw-nut of Corning's are quite unnecessary. The smaller the opening in the integument, everything else being equal, the better.

In most instances the line uniting the iliac crests in the mid-point of the back skirts the lower border of the spinous process of the fourth lumbar vertebra; at times it passes through the middle of it. The practical point to remember, whether it passes through or just below it, is that it is the fourth vertebra and the site of puncture is between this and the fifth, not more than 1 cm. external to it on the right or left side. If the needle is directly in the space between the contiguous vertebræ it need only be pushed in from without inward. It is only when it is introduced too low that it impinges upon the lamina of the vertebra below; it must then be depressed and also pushed from below upward to enter the spinal canal. The punctures have been made by me with such extreme ease that I can tell the instant it enters the interlaminar ligament and membranes of the cord and the moment the fluid will appear. The needle should be thrust through the skin quickly; then, giving the patient time to recover from the slight shock, it is gradually pushed inward, bearing in mind, the direction until the subarachnoid fluid appears. This should not be allowed to drip away; but the syringe filled with the required quantity of cocaine solution is adjusted to the needle and the cocaine slowly injected, about one minute being consumed in doing it. The needle is not immediately withdrawn, but is al-

[1] Read before the Section on Obstetrics and Gynecology of the New York Academy of Medicine, October 25, 1900.

[2] For a complete description of the technic see the author's paper read before the New York State Medical Association, October 18, 1900, and published in the *Philadelphia Medical Journal*, November 3, 1900.

lowed to remain *in situ* about two minutes. It should be distinctly remembered that my observations are based upon the injection of 20 m. of a two-per-cent. solution of cocaine, the injection being sometimes repeated, but never more than once.

Anesthesia appears in from two to twenty minutes and is evinced usually by a paresthesia in the lower extremities variously described by different patients. Some are not cognizant of this paresthesia until the effort is made to rise from the chair; they then imagine they cannot move. Motion is not impaired, however, for when they are told to bend the legs, etc., in most instances they can readily do so. Anesthesia in my experience frequently extends to the axilla, occasionally to the clavicle, at other times to the lower ribs or umbilicus, the middle of the thighs or only to the ankles; it is usually symmetrical, occasionally higher on one side than on the other; in one case it was present upon one side only and this from the buttock down along the posterior aspect of the thigh and leg to the ankle and across the instep and the whole sole of the foot.

In some patients well-developed paresthesia was noted in the upper extremities in one of these. The patient was in the Trendelenburg position. Sensation to pin-prick was present, however.

The duration of anesthesia varies in different patients, the longest period being three hours. I doubt, however, if it was sufficiently complete to be available for surgical purposes; in most instances no doubt it would be for operations on the lower extremities; in abdominal operations patients who still have anesthesia in the lower extremities have decided sensations during manipulations toward the end of the procedure. An anesthesia for an abdominal case lasting one and one-half hours in my estimation would be long. Anesthesia often passes off much sooner, in one case it lasted but forty minutes.

Muscular relaxation is very complete; the sphincters often lose their tonicity, in one case the rectal contents were forcibly expelled during vomiting. Voluntary contraction of muscles is present; expulsive effort is not impaired. The respiration in all patients is increased, frequently doubled, the normal rate usually varying between 24 and 30, at times shallow, at other times full; one patient had evident air hunger, but this quickly passed off. The pulse immediately after injection is always increased in frequency, usually about 120—at times higher; sometimes it is small and often within a half hour falls as low as 60 and becomes full; sometimes it is irregular; it then increases in frequency to something above the normal rate. The decrease in the pulse is not followed by a like decrease in the respiration. Less than half the patients had nausea and vomiting. When it did occur it came on at times soon after the injection and sometimes half an hour after. In one case nausea was very intense. It usually quickly ceased, but occasionally occurred the following day. Many patients exhibited marked pallor of the face with a slight cyanosed condition about the lips and tips of the fingers; later on the face became suffused, showing a decided contrast to the previous condition. The pupils in most instances were normal, at times slightly dilated but never markedly so; the rather darkened condition of the room could account for the slight dilation. Occasionally the pupil was contracted, particularly so in one case after a hypodermic injection of morphine. Perspiration more or less profuse occurred in all but two cases. I attribute this to paralysis of the sympathetic similar to that caused by general anesthetics. The temperature sometimes rose as high as 103° F. There was some rise of temperature in more than half the cases. In one patient it reached 103.4° F., but as there was a pus pocket associated with the case the surgeon attributed the temperature to that. After this was opened the temperature gradually approached the normal. Headache in the occipital or frontal or temporal regions occurred in half the patients; in four it was very intense; in the others only moderately so. In most of the patients it passed off in twenty-four hours, leaving a dull feeling about the forehead. Some of the patients had slight rigors and a condition of restlessness the following day, with dull aching in the bones, particularly of the lower extremities. Two of the patients had muscular rigidity of the muscles of the back and of the back of the neck; in one patient this persisted for a week.

Some of the patients were entirely free from all subjective symptoms. Anesthesia failed entirely in three cases, in two of which more than half a grain of cocaine was injected. In others anesthesia was partial; in still others a second injection produced satisfactory anesthesia. Marked toxic symptoms developed in one patient, an obstetric case. The respiration was gasping, shallow, and 60 to the minute; pulse 140, small and irregular; profuse perspiration; muscular tremors; face absolutely colorless, pupils contracted. This patient had very intense headache for two days following the injection.

Deductions based upon my own experience and also the reports of other investigators which do not materially differ from mine can be summed up as follows:

1. Cocaine introduced into the subarachnoid space acts in the same way as it does when injected into the general circulation, being, possibly, less toxic.

2. There is no definite quantity which will answer in all cases. Some are easily influenced by small doses, whereas others require large amounts to produce the desired effect.

3. Temperament, type of patient, and condition of health do not seem to influence the action of the drug. Large, healthy individuals are often affected by small doses, whereas the sickly, emaciated types often require second injections to produce anesthesia.

4. There is no method of determining how

any particular dose will act in a particular case.

5. Large doses should never be used until the individual susceptibility is determined.

It is singular that when a first injection produces no anesthetic effect it also produces slight physiological symptoms. A second injection may then be made with safety. When anesthesia is but partial a second injection may be made, this to be less, however, than the first.

This is the only practical and safe plan to be followed in all cases. Differing in no way from toxic drugs introduced into the general circulation, it has been said that a large dose, say of morphine, often produces the desired effect when a small one does not. This is quite true. I do not believe any one would introduce what might be a toxic dose of morphine without first ascertaining the patient's individual susceptibility. Cocaine differs in no way from morphine in this respect. In a case reported by Boldt[1] some years ago the injection of a few drops of a four-per-cent. solution produced very toxic symptoms which almost caused death. Cocaine was just beginning to receive attention as a local anesthetic. A patient with supraorbital neuralgia had injected 15 m. of a four-per-cent. solution of cocaine. There was first observed redness of the face, then vertigo, increased pulse with diminution of volume, frequent short respirations and distress about the region of the heart; after two or three minutes the patient fell unconscious to the floor. Respiration ceasing entirely, artificial respiration was employed and the patient restored after fifteen or twenty minutes. Respiration became spontaneous to the extent of 5 or 6 to the minute, deep and sighing; pulse weak; pupils dilated, without reaction to light; conjunctivæ sensitive however. Previous to regaining consciousness there was observed spasmodic contraction of the upper extremities. Speech was incoherent and after one hour the patient walked with unsteady gait. The neuralgia was absent for three days; then a second injection was made at the urgent request of the patient, 10 m. of a four-per-cent. solution were injected and the symptoms occurred in exactly the same order, only not lasting so long. A third injection of 5 or 6 drops produced vertigo, dyspnea, oppressive feeling about the heart; the symptoms disappeared in a few minutes. Boldt's experimental researches upon animals differ more in degree of intensity of symptoms than kind; the latter were very similar to those which developed in the obstetric patient before mentioned.

Whether intraspinal cocainization will prove to be more valuable in obstetrics than in general surgery, time alone can tell. The marked toxic symptoms and the disagreeable after-effects may be found to more than offset any advantages which the method may possess. It is probably not generally known that cocaine was used locally in obstetrical cases by Dr. Polk of this city fourteen years ago. An interesting account of his experience with it appears in Knapp's monograph on "Cocaine," published by G. P. Putnam's Sons. The injection of 4 m. of a four-per-cent. solution of cocaine into the anterior and posterior lips of the cervix produced anesthesia for one hour during the first stage of labor, during which time the patient complained only of discomfort over the symphysis and of some dull pain over the sacrum; the cervix could be stretched freely without causing pain. During the second stage injections were made in the vaginal walls along the course of the distribution of the pudic nerves, and the results were so far satisfactory that the child's head passed out of the vagina with so little discomfort that the patient uttered no complaint. Dr. Polk told me the method fell into disuse because it offered no advantages over chloroform.

It has been said that intraspinal cocainization has produced no mortalities. I believe Tuffier reports at least one case in which the patient died of asphyxia which can be attributed to cocaine. It is no more than just, however, to state that the safest anesthetic introduced would eventually have deaths attributed to it, but fatalities occurring during narcosis are not necessarily due to the anesthetic.

How does the method compare with our general anesthesics? Retention of consciousness is said to be one of the advantages. Were this question canvassed among patients generally the vast majority would prefer to know nothing while being operated upon. It is said to be advantageous in cardiac disease. It has so frequently been my office to administer anesthetics to patients suffering from organic cardiac disease with such satisfactory results that I can see no advantage in this method over ether or chloroform properly selected and administered. In fact, I would consider cocaine less safe because of its marked circulatory involvement. It is not so much the organic lesion as the character of the heart's action which indicates whether a patient is apt to behave well under general anesthesia.

Absence of pneumonia and nephritis is another advantage mentioned. Were every patient who takes a general anesthetic to develop these complications there would be no question but that intraspinal cocainization would be the method *par excellence*. As a matter of fact, pulmonary and renal complications are rare following general anesthesia, particularly so when properly administered.

In certain forms of renal disease intraspinal anesthesia would undoubtedly be safer than ether or chloroform. Take, for instance, a patient with a well-developed nephritis, a secondary bronchitis and irregular heart-action: while ether properly administered would no doubt stimulate the heart, it would be obviously unsafe for the kidneys and lungs: chloroform would be selected as the safest anesthetic: in spite of every precaution renal suppression occurs. Spinal

[1] *New York Medical Press*, 1885–6, p. 105.

anesthesia would be the safest method in such a patient and I would have no hesitancy, providing nitrous oxide and oxygen were not applicable, in advising its use in preference to ether or chloroform, for I have seen just such suppression occur when chloroform as well as ether was being employed as a general anesthetic. Fortunately, however, such cases are extremely rare, but the possibilities should always be borne in mind by the surgeon and anesthetist.

When the patient has an ungovernable fear of general anesthetics and refuses to have them administered, the status of intraspinal anesthesia may be stated to him and it may be used providing he prefers it and fully comprehends the dangers of the method.

In spite of every precaution in technic failure to produce anesthesia does occur. This is most frequently and I think improperly attributed to the boiled solution. It is questionable whether cocaine freshly prepared and boiled one minute is rendered inert. A decided disadvantage is the uncertainty as to the time anesthesia will last. No more deplorable condition is conceivable than to have the anesthesia pass off during an important part of an abdominal operation. The method should not be used in minor cases where the puncture and injection are in magnitude altogether out of proportion to the operation.

To sum up: To me, with the experience gained to date—I shall, however, have no hesitancy in altering my views should further observation warrant it—anesthesia by intraspinal cocainization will have a place in surgery not as the method for general use, but when for various reasons general anesthetics should or cannot be administered. While this does occasionally occur, it is exceedingly rare. There are few patients requiring operations who cannot take one or the other of our three general anesthetics. I see no reason to change what is in my estimation the order of safety of anesthetics except to add to the end of the list intraspinal cocainization. This may be stated as:

1. Nitrous oxide and oxygen.
2. Nitrous oxide and air.
3. Ether preceded by nitrous oxide.
4. Ether alone.
5. Chloroform preceded by nitrous oxide and ether.
6. Chloroform preceded by ether.
7. Chloroform alone.
8. Intraspinal cocainization.

With reference to 5, 6 and 7 it is my belief that 75 per cent. of the early fatalities from chloroform could be prevented by the preliminary administration of gas and ether or ether alone.

When intraspinal cocainization has been used with a mortality comparable with nitrous oxide and ether, then and not until then will we be in a position to definitely assert that it can be safer than that most generally useful and safe combination of anesthetics.

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FURTHER EXPERIENCE WITH SUBARACHNOIDEAN INJECTIONS OF COCAINE FOR ANALGESIA IN ALL OPERATIONS BELOW THE DIAPHRAGM.

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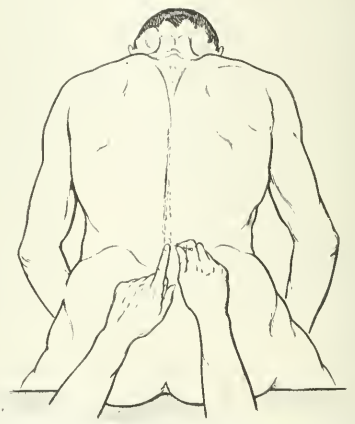
THE history of subarachnoid cocaine anesthesia is familiar to readers, and it is unnecessary to consider it in this article. We wish to mention the practical results of this procedure from a clinical standpoint, after considering its technic. Its administration in the great majority of cases is easy. The patient is placed in a sitting posture, with the body bent sharply forward so as to separate the spinal laminæ as much as possible. The skin, having been sterilized in the usual way, a needle, two and a half inches in length, with a short bevel, is inserted between the

FIG. 1.

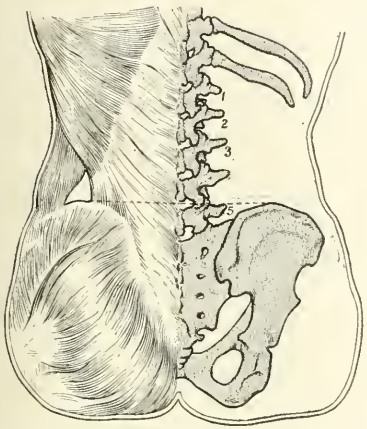


The patient sits upon the edge of the table; the operator having previously localized the iliac crests, with the left index finger he locates the spinous process corresponding to the bi-iliac transverse line. The needle is inserted with the right hand 1 cm. in front of this apophysis. (Cut after Tuffier.)

fourth and fifth lumbar vertebræ. The thumb should be placed upon the spinous process of the fourth, so that its tip passes a little below and to the left of the process. The needle is then inserted directly forward, not tilted upward, until the resistance of the interlaminal membrane is encountered. When the needle is pushed slowly through this the cerebrospinal fluid escapes, sometimes in drops and sometimes in a stream. The syringe should now be connected, and fifteen minims of a one-and-one-half or two-per-cent. cocaine solution slowly injected, a process requiring from thirty to forty seconds. The needle is then withdrawn, and the opening closed with collodion. The patient is placed in the recumbent position and preparations made for operation. The analgesia is complete in from six to eleven minutes in all cases.

The dangers of failure in technic are: (1) The cocaine solution may not be fresh, and therefore may have lost its analgesic properties. It must be borne in mind also that cocaine undergoes

Fig. 2.



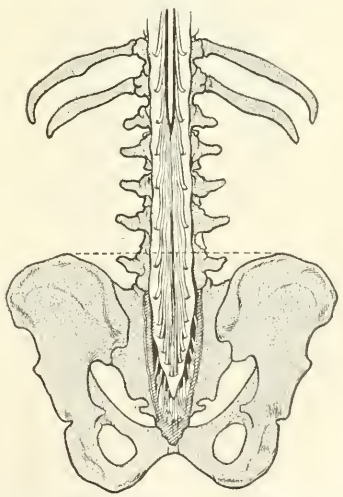
The broken line shows the vertebra corresponding in position to a horizontal line extending from the uppermost point of one iliac crest to that of the other posteriorly. (Cut after Tuffier.)

decomposition when boiled. (2) The needle may escape from beneath the dura, or be forced through the dura in making the connection of the barrel with the needle. In that event the fluid would escape in front of or behind the dura, and no analgesic effect would follow. When the needle is being inserted, if the interspace is not penetrated in the first effort, it should be partially withdrawn and its direction changed a number of times, as it is likely to become filled with blood, which coagulates and does not allow the cerebrospinal fluid to escape even though the tip be within the canal. In such instances the needle should be removed and washed out with sterile water. In my recent cases I have filled the needle with cocaine solution before inserting it, water answering the purpose just as well, and placed my finger over the end of the needle, so that no blood was admitted into the needle until I felt that I had penetrated the dense membrane between the lamellæ. I believe I have saved myself the annoyance of changing the needle a number of times by following this plan. A fairly strong needle should be used, as in muscular patients its direction is changed very much by the spasm of the muscles when the needle is inserted. I always tell the patient that a needle puncture is to be made; that he will not be unconscious; that he will know everything that is going on, and still he will have no pain.

I wish to call particular attention to Case XXIV., as it emphasizes the importance of a fresh solution. There was also one case in which I was unable to find the interspace between the laminæ, as the patient could not be placed in a sitting position, and his back was somewhat deformed on account of ankylosis.

The manifestations, after the injection, as given by the patient, occur in the following order and at about the average time herewith given: A sensation of numbness in the feet and legs comes on about four minutes after the injection. This rapidly extends up to the trunk and as high as the costal arch. Five minutes after the injection the patient complains of thirst, a tingling in the tongue, a sensation of anxiety in the precordial region, and a sense of heat. From eight to twelve minutes after the injection many of the patients are nauseated; some of them vomit. Six or seven minutes after the injection there is usually a slight increase in the pulse. In some cases it is very pronounced from the moment of the injection, and even preceding it, due to the nervous condition of the patient. In all of the cases cited, except Case XXIV., the analgesia was perfect, and all have progressed to uninterrupted recovery without the least complication. After the patients were removed from the operating-room there was no nausea nor emesis in any of the cases, and it was gratifying to notice the excellent condition of the patients on the evening of the operation. Even the patients upon whom laparotomy was performed were much better than those in whom a general anesthetic had been used.

Fig. 3.



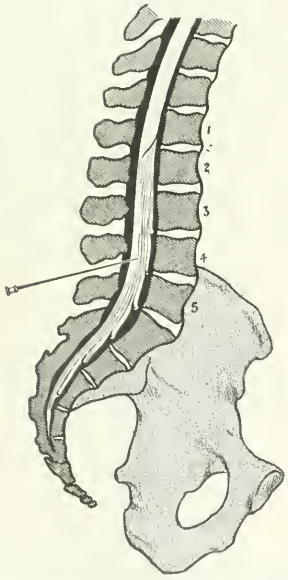
The broken line shows the distance existing between the needle and the spinal cord when the arachnoidean cul-de-sac is penetrated. The spinal cord terminates at the lower border of the body of the first lumbar vertebra. (Cut after Tuffier.)

As the anesthesia is probably due to a local effect upon the posterior nerve-roots and not to absorption, the solution being diluted immediately with the cerebrospinal fluid, I have very much

less apprehension than I had when it was first suggested or when I first saw it used. There has not been a single case of depression of the pulse to the extent which I observed in Tuffier's clinic. Whether this is due to the cocaine or to a difference in the patients, I do not know; but the clinical fact remains that for minor operations, such as operations upon the foot, leg, knee, thigh, and hip, I believe that ten minims of a two-per-cent. solution will be sufficient.

The indications for cocaine cannot be given at the present time from a clinical standpoint. However, I would say that for the operations of strangulated hernia, intestinal obstruction, crushing injuries of the lower extremities, compound fractures, dislocations, operations on the

Fig. 4.



The needle can be seen in the arachnoid space; the nerves being laterally situated are not in danger of injury. (Cut after Tuffier.)

perineum, vaginal hysterectomy, and in intra-abdominal operations when the respiratory tract or the kidneys are at all impaired, cocaine should be the anesthetic of election, as far as we understand it at the present time.

The cocaine may be secured from the manufacturers in solution in vacuum-glass ampullæ, in which it will keep perfectly for two months, or in dry anhydrous crystals in glass ampullæ, marked, containing fifteen minims and thirty minims in amount, to which sterile water may be added at the time of administration. This insures the efficacy of the cocaine and the sterility of the medium.

The syringe should have a slide and not a screw connection, as in twisting the barrel one is likely to dislodge the tip of the needle from beneath the dura.

We do not use this method of anesthesia in every case, either in clinics or in private practice, but each week its range of usefulness is increasing as confidence and security are assured by the results.

Since my return from the International Medical Congress, August 19th, I have used this method of anesthesia in twenty-five cases, with the following results:

Case I.—Miss B., Cook County Hospital, aged twenty-two years; left pyosalpinx, with history of rupture into the intestines. Injection of 15 minims of a two-per-cent. solution of hydrochlorate of cocaine in the subarachnoid space in the lumbar region on a level with the iliac crests. The needle was easily inserted, the cerebrospinal fluid escaped, and about forty seconds were consumed in injecting the fluid after the syringe was connected. The opening, when the needle was withdrawn, was sealed with collodion. The operation was begun eight minutes after the injection. A medium incision was made; the adhesions were very extensive and firm. It was difficult to separate the tube from the bowel. The wall of the latter was enormously thickened, and I feared that a sinus was present. Careful examination, however, did not reveal one. The tube was removed, the pus sponged out, and the omentum drawn over the intestine and pressed down into the pelvis, as the sigmoid was fixed and could not be turned down to protect the abraded surface. The operation was completed by closing the abdomen with figure-of-eight sutures. No drain. The patient was conscious of the fact that she was being handled, but there was not the slightest pain. She was nauseated and vomited six times after the operation was begun, retarding the work a couple of minutes. The pulse at no time exceeded 75 and ranged from that to 60. She did not vomit after the operation. Her temperature that evening reached 102° F.; since then it has been normal and no unpleasant symptom has occurred.

Case II.—Male, aged fifty years, Cook County Hospital. Varicose veins of the leg; Schede operation. Thirteen minims of cocaine. A two-per-cent. solution was used for injection. Anesthesia complete in seven minutes. Some nausea and vomiting during the operation. Anelgesia perfect. The pulse was not accelerated and was strong at all times.

Case III.—Male, aged forty-six years, Cook County Hospital. Sensitive ulcerated stump following amputation for diabetic gangrene. In this case 15 minims of eucaine solution were injected. A little difficulty was experienced in getting the needle between the laminæ. Some nausea and vomiting occurred as with cocaine. It was twelve minutes before the analgesia was complete, and there was some return of sensation ten minutes after the operation was begun. On the whole, it was not as satisfactory as cocaine.

Case IV.—Female, Cook County Hospital;

small tumor of left ovary in a very neurotic patient. Injection of 11 minims of a two-per-cent. solution of cocaine. Nine minutes after the injection the analgesia in the abdominal wall was complete. An incision was made, the ovary and tumor removed in the usual way; abdomen was closed with a figure-of-eight suture. Eighteen minutes after the injection there was one effort at vomiting. The patient said she had a sense of nausea. The insertion of the needle did not give the slightest pain. Her extremities from the toes to the hip were tested with needles. The sense of touch was present, but no pain was produced by the prick. There was no vomiting after the operation. The patient's pulse was 120 before the operation was begun, and 90 when it was completed. Time, twenty-one minutes from the injection to the completion of the operation.

Case V.—G. B., aged eight years, Alexian Brothers' Hospital, September 11th, appendectomy. Intermediate operation; 15 minims of a two-per-cent. solution of cocaine injected. Complete analgesia in nine minutes. Transrectus incision; appendix postcecal; separated from caput coli by pathologic amputation; removed; closed without drain. Pulse before operation, 150; when abdomen was opened, 140; remaining so during the operation of ten minutes. One effort at vomiting twelve minutes after the injection. No vomiting after operation. Temperature same evening, 99° F.

Case VI.—I. S., aged fifty-one years, Alexian Brothers' Hospital, September 11th. Arthrectomy left knee-joint; traumatic synovitis; 15 minims of a one-and-one-half-per-cent. cocaine solution injected; analgesia in eleven minutes. Nauseated; vomited fourteen minutes after injection; pulse 140 all the time; very neurotic patient. Temperature same evening, 99.6° F. No unpleasant after-effects.

Case VII.—Male, Alexian Brothers' Hospital, September 11th. Suppurative epididymitis; curettement. Injection of 12 minims one-and-one-half-per-cent. cocaine solution; analgesia in seven minutes; nausea; vomited once thirteen minutes after injection; pulse rapid all of the time, before, during and after the operation. Temperature, 100.6° F. the evening after operation. No unpleasant symptoms.

Case VIII.—O. H., aged fifty-eight years, Alexian Brothers' Hospital, September 11th. Schede operation. Varicose ulcer of leg. Injection 15 minims of a one-and-one-half-per-cent. cocaine solution. Analgesia of lower extremities in seven minutes. Nausea and slight vomiting. Pulse never above 90. Patient phlegmatic, had no apprehension of pain, discomfort or danger from the operation, contrasting markedly with the previous cases. Temperature, 99.4° F. on evening after operation. It will be noted that in all cases operated on September 11th the evening temperature exacerbation was absent.

Case IX.—H. P., aged thirty-five years, Alexian Brothers' Hospital, September 12th. Strangulated femoral hernia of fifty-four hours' duration. Injection of 15 minims one-and-one-half-per-cent. solution. Analgesia in eight minutes. Usual incision, intestine liberated, gloss was present, circulation slowly returned, resection unnecessary, sac excised and femoral canal closed with kangaroo tendon. Patient vomited before injection and frequently during operation. The vomitus was that characteristic of obstruction. Pulse was 130 before injection, reached 144 during operation, was 120 at completion of operation and fairly strong all of the time. Duration of operation, twenty-two minutes. The patient had no pain or inconvenience at any time during the operation. His bowels moved freely on the table. He said he felt better than at any time since the onset of his illness.

I believe cocaine has very decided advantages in cases of intestinal obstruction; *first*, the patient is quickly prepared for operation; *second*, the danger of inhalation-pneumonia is *nil*, a matter of grave importance; *third*, the prolonged depression so general in this operation from general anesthesia is avoided.

The following cases in my service were by Drs. Lee, Oswald, and Neff:

Case X.—Patient sixty-two years old; suprapubic cystotomy. Fifteen minims of a one-and-one-half-per-cent. cocaine solution; patient did not vomit and the introduction of the sound did not give pain.

Case XI.—Patient fifty-six years of age; papilloma of rectum; 15 minims of a one-and-one-half-per-cent. cocaine solution; sphincter ani dilated; perfect analgesia; no vomiting.

Case XII.—Patient aged forty-two years; varicose veins of leg; Schede; 15 minims two-per-cent. cocaine solution; nausea.

Case XIII.—Patient's age not given; inguinal hernia, radical cure; 15 minims one-and-one-half-per-cent. solution; no vomiting; no pain.

Case XIV.—Aged thirty-four years; inguinal and umbilical hernia; 20 minims of a one-and-one-half-per-cent. solution; time for both operations, 45 minutes; nausea; no vomiting.

Case XV.—Male, aged twenty-six years; cystoscopy of bladder; 15 minims of a one-and-one-half-per-cent. cocaine solution; some nausea; no vomiting; time of operation, 35 minutes. The prostatic portion of the urethra gave an unpleasant sensation, though no pain.

Case XVI.—Male; carcinoma of penis; amputation and removal of inguinal glands, both sides; perfect analgesia; some nausea and efforts at vomiting.

Case XVII.—Extensive burn of the thigh; terminal growths; 40 square inches; 15 minims of a two-per-cent. solution; complete analgesia in nine minutes; some nausea; no vomiting.

Case XVIII.—Female, aged fifty-nine years; intra-uterine polypus; dilatation, removal of polypus, curettement; analgesia in seven minutes; pulse 74 at the highest; no nausea; no vomiting.

Case XIX.—Female; retroversion; polypus; small cyst of ovary; 15 minims of a two-per-

cent. solution; analgesia in eight minutes; laparotomy, removal of cyst of ovary, ventral fixation; considerable vomiting due to the fact that a four-per-cent. solution was imperfectly mixed with sterile water to make it of two-per-cent. strength; time of operation 15 minutes; not the slightest pain at any time.

Case XX.—Mrs. X, aged thirty-four years; large uterine myofibroma. Abdominal myomectomy; 15 minims of a two-per-cent. cocaine solution. In nine minutes analgesia was perfect; median incision. Enucleation of fibroid from uterine wall; double row of silver catgut sutures of uterus; closure of abdominal wall with silkwormgut. No vomiting; analgesia perfect; highest pulse 94. Patient said, "It is just play compared with taking chloroform."

Case XXI.—Male; ankylosis of hip; ununited fracture of femur. It was impossible to put patient in the sitting position and I was unable to insert the needle with the patient on his side. The attempt was abandoned.

Case XXII.—Male, aged thirty-seven years; hemorrhoids; 15 minims of a two-per-cent. solution. In seven minutes the analgesia was complete. The sphincter was stretched without the slightest manifestation of pain or reflex. Tumors removed with cautery and without pain. No nausea and no vomiting.

Case XXIII.—Male, aged twenty-four years, Mercy Hospital; large varicocele; phlebectomy; 12 minims of a two-per-cent. solution (two months old, but in a vacuum-glass ampulla); analgesia was complete in seven minutes; more nausea than usual; no vomiting; complained of sense of heat in chest; pulse 92 at highest; somewhat diminished in force and volume. I saw him an hour after operation and he said he never felt better in his life. No headache or other unpleasant symptoms followed.

Case XXIV.—Mrs. X., aged twenty-six years; Cook County Hospital; acute appendicitis; abscess rectocecal; small appendix removed. Injection of 15 minims of a two-per-cent. solution of cocaine; after ten minutes not the slightest analgesia; no nausea or sense of numbness; no anxiety. Investigation showed that the interne had used an old solution of cocaine which had decomposed from standing. The two bottles were just alike and the mistake was pardonable. I did not dare to use another injection on the same patient, but used the fresh solution immediately on the next case with positive results.

Case XXV.—Mrs. F., aged fifty-two years; Cook County Hospital; tubercular tendovaginitis, dorsal tendons left foot; extensive dissection of the tendon sheaths; injection of 13 minims of two-per-cent. solution of cocaine, fresh; complete analgesia; no nausea and no vomiting; no cardiac pneumonia; patient felt perfectly well after removal to room. This is a beautiful contrast to the previous case, showing the importance of fresh cocaine solution, or one, at least, that has been free from bacterial action.

THE EXAMINATION OF STOMACH-CONTENTS.

By W. A. BASTEDO, PH.G., M.D.,
OF NEW YORK.

NEW laboratory methods when first propounded are apt to repel the general practitioner, because the practical application of them is difficult and the value of their findings not yet established. He does not see how he can use them in his own practice, although he may recognize their value in the hands of the specialist. Yet as time goes on the methods become simplified, a few tubes and solutions replace the early complicated and extensive apparatus, and the results become more definite and of more real diagnostic significance. Then only can the busy practitioner without laboratory facilities begin to use such methods for the benefit of his patients. It is thus that the examination of stomach-contents, which until recently has been carried on only by stomach specialists and clinical chemists, has become an easy undertaking. It is true that among the many processes outlined in works on the stomach no stress is laid upon the value of the simpler methods which can be put into daily practical use, and the reader is made to feel that he must not only be possessed of excellent chemical technic and a compound microscope, but must also expend much time and labor if his examination is to be of any value. That this impression is a mistaken one and that thanks to the realization of its diagnostic significance in internal medicine, the examination of stomach-contents can now be performed by the general practitioner without elaborate apparatus or the loss of much time, I propose to demonstrate.

The simplest and best test-meal consists of a good-sized hard breakfast roll without butter, taken when the stomach is empty, thoroughly chewed, and washed down with twelve ounces of water. At the end of an hour a stomach-tube is passed and through it the stomach-contents are voluntarily vomited by the patient, aided if necessary by pressure on the pit of the stomach. To favor the passage of the stomach-tube, it is dipped in warm water, held between thumb and forefinger like a pen, and passed in the middle line of the mouth. As it reaches the fauces the patient is directed to swallow, and as he does so the tube is rapidly pushed on into the stomach. The desire to gag is overcome if the patient takes deep breaths during the swallowing and after the tube is in the stomach. The saliva is prevented from running into the receptacle by wrapping a towel around the tube.

The liquid evacuated contains a sediment of more or less digested bread. If fermentation is going on in the stomach, there is a layer of foam on the surface, and the odor is that of butyric and other fatty acids. The amount of mucus present may be estimated by lifting it upon a loop of wire. Five cc. of the filtered contents are placed in a porcelain dish with a drop or two of one-half-of-one-per-cent. alcoholic solution of di-

methyl-amido-azo-benzol. If this becomes pink it indicates the presence of free hydrochloric acid, and this is estimated by adding decinormal sodium hydroxide solution from a Mohr's burette (50 cc.), drop by drop, until the yellow color of the azo-benzol is restored. This occurs when the free hydrochloric acid is neutralized. The number of cc. of sodium hydroxide used indicates the amount of hydrochloric acid present. To the same 5 cc. are added a few drops of one-per-cent. solution of Congo red, and this, if any further free acid is present, turns violet. Such free acid is organic and is estimated by adding the hydroxide until the red color returns. Lastly, a few drops of one-per-cent. alcoholic solution of phenolphtalein are added and the sodium hydroxide continued until the resulting pink color becomes no deeper on the addition of a single drop of the decinormal solution. This represents the combined acid or acid albumin, and the acid salts. As 5 cc. of stomach-contents have been employed, the number of cc. of sodium hydroxide used in each case must be multiplied by 20 to represent the ingredients in 100 cc. If only 2 cc. of contents are used the figures must be multiplied by 50. The sum of the results represents the total acidity.

Normally the return from the test-meal should be 60 to 100 cc., with acidity 50 to 60, free hydrochloric acid 10 to 15, combined acid 40 to 50, no organic acid and only slight mucus. The lactic acid-forming bacilli do not grow in the presence of free hydrochloric acid, so if this is found, lactic acid is not tested for; but if hydrochloric acid is absent and the Congo-red reaction is positive, the lactic acid test must be made as follows: One drop of tincture of iron is mixed with enough water to leave a barely perceptible color, and the liquid divided between two test-tubes. One tube is retained for comparison, and to the other a few drops of filtered contents are added; a yellow color indicates lactic acid. An ether extract of the contents will give the test more clearly and with greater sureness.

If blood is suspected mix 5 cc. of filtered contents with 3 cc. of glacial acetic acid, and add 5 cc. of ether. Shake well, set aside until the ether rises, and pour it off; to this ether add a few drops of tincture of guaiac and then a like amount of peroxide of hydrogen. A dark-blue color indicates blood.

The deviations from normal acidity are due to increase, decrease, or absence of free and combined hydrochloric acid, to great variability in the amount of acidity and to the presence of organic acids. Change in the amount of hydrochloric acid accompanies changed glandular activity, and this may be functional or organic. Persistent increase of mucus points to the latter. Increased acidity is found in hyperchlorhydria, hyperchylia, the hypersthenic type of chronic gastritis, and usually in ulcer. Decrease of acid occurs in functional loss of glandular activity, and in the asthenic form of chronic gastritis. Much diminished total acidity with absence of free hydrochloric acid points to an atrophic condition; and this, if lactic acid is present, favors carcinoma. Marked variations in the acidity in successive examinations suggest gastric neurasthenia, a condition in which the stomach symptoms usually depend on the ingestion of food, but not on the kind of food. In general neurasthenia a persistently asthenic stomach may be expected. Organic acids other than lactic indicate fermentation and are easily recognized by their characteristic sour smell.

An excessive amount of stomach-contents at the end of the hour means either excessive secretion, pyloric or duodenal obstruction, or muscular asthenia. Much fermentation opposes simple hypersecretion, a normal percentage composition favors it. Active visible peristalsis opposes muscular asthenia and favors obstruction; similar evidence is obtained from the absence of splashing two hours after the ingestion of a pint of water on an empty stomach.

The test-meal is, of course, but one factor in the diagnosis, yet at times it may be the only means of determining the intragastric condition and, besides its function in diagnosis, it also gives direct information as to the kind of treatment necessary. Excessive acidity demands food which is non-stimulating or has much affinity for the acid. Appropriate foods would be milk, if well borne, cornmeal, wheat, flaked rice, eggs, game, white meats, and lean fish. A limited amount of starchy food may be allowed, and plenty of water to dilute the very acid gastric juice. Spices should be avoided. Of drugs, 1/25 grain of extract of belladonna twenty minutes before meals tends to lessen stomach secretion without systemic effects. An antacid may be given two hours after meals. If the bowels are loose this may be chalk mixture; if constipation exists, rhubarb and magnesia without ginger. For diminished acidity the dietary may include milk, oysters, sweetbreads, mutton, red meats, soft-boiled eggs, oatmeal, green vegetables, mashed baked potatoes, and toast or stale bread. Each meal may be preceded by a bitter or stimulant, such as infusion of quassia or condurango, or the compound tinctures of gentian, cinchona, and cardamon. In cases of much diminished acidity, it may be necessary, in order to protect the intestines, to aid digestion with a grain or two of pepsin and ten minims of dilute hydrochloric acid, given once or twice during the digestive period. If there is much mucus, early morning lavage may be of benefit; if fermentation is present, lavage at night will often permit comfortable sleep. Atrophic conditions throw the burden of digestion entirely upon the intestines, therefore the food must be such as to be easily evacuated by the stomach and readily digested in the intestines. It may include milk, soups, broths, well-cooked cereals, baked apples, mashed and strained vegetables, and finely-divided light meats. Massage over the stomach, or alternate hot and cold water, and the internal administration of strychnine stimulate the motor

activity and favor the passage of the food into the intestines. Fruits that cause the formation of much gas, or induce looseness of the bowels, should be prohibited.

A suspected ulcer contraindicates the use of the stomach-tube, and in such a case the vomitus may give valuable information. If the stomach-contents are protected from evaporation, the examination may be deferred until convenient, for the gastric juice is antiseptic, and but little digestive change takes place outside the body.

Thus, as has been shown, the general practitioner, with the present simple methods at his disposal, need no longer feel that an amateur attempt to examine stomach-contents is impracticable or valueless.

THE HYDRIATRIC TREATMENT OF TUBERCULOSIS.[1]

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Since the empiric, Priessnitz of Graefenberg, created a world-wide interest in the curative properties of thermic applications by means of water by restoring to health multitudes of chronic invalids whose cases had been considered incurable, it has been known that hydrotherapy possesses marvelous restorative power in pulmonary tuberculosis. Winternitz of Vienna has published most favorable statistics, and Aberg, in an admirable and interesting paper published in 1890, gave an account of a large number of cases successfully treated by hydriatric means which had stubbornly resisted other measures. Numerous other writers have presented papers on the same subject, especially during these last few years, among which the writer desires to call special attention to the paper of his colleague, Dr. W. H. Riley, of the Colorado Sanitarium, Boulder, Colo.

I have made extensive use of hydriatric methods in the treatment of pulmonary tuberculosis during the last twenty-five years, and will endeavor to present in this paper a brief account of the methods which I found especially helpful as curative agents and as palliatives of the various distressing symptoms complicating morbid conditions, which attend this malady in its several stages.

That the natural curative powers of the body are capable of successfully combating tuberculous disease is shown by the fact that the reports of pathological laboratories in this country as well as in Europe show tuberculous lesions in one-half of all the cases examined post-mortem.

The fact that, although nearly all human beings are almost constantly exposed to infection by the bacillus tuberculosis, all do not contract the disease clearly indicates that the bacillus alone is not sufficient to give rise to pulmonary tuberculosis. The soil in which the tubercle germ flourishes best is found in the tissues of a deteriorated organism. And it is without doubt by the lowering of the vital status of the individual, the lessening of his resistance to pathogenic agents, which from a therapeutic standpoint must be regarded as the real foundation of this formidable malady. This statement is based upon two potent facts: (1) It is impossible directly to destroy the tubercle bacilli when they have once obtained a foothold in the lungs without the employment of such measures as will destroy the living tissues as well as the parasitic microbes. For this reason all the methods of treating pulmonary tuberculosis which have been addressed exclusively to the destruction of the bacillus have proved unsuccessful. (2) Even if the bacillus could be destroyed by germicides or by other means, a return of the disease must be expected, for it is practically impossible to escape exposure to infection, and when infection of an organism has once occurred, the fact is evidence that the individual is susceptible to the disease; that is, his vital resistance has been lowered to such a degree, and the defenses of his body so deteriorated, that he is no longer able to resist the invasion of these pathogenic agents.

I hold that the most important thing to be done in dealing with any case of tuberculosis, aside from meeting such indications as are necessary to contribute to the patient's comfort, or to arrest some process likely to prove immediately fatal, is to build up the person's vital resistance, to improve the quality of his tissues, to raise his whole vital status, and to recover, as far as possible, his original ability to resist the invasion of parasitic organisms and to destroy them when they have gained entrance to the body. The healing power of all disease is in the body itself. Disease of whatever character or origin—acute, chronic, idiopathic, traumatic, or infectious—if recovered from, must be conquered by the body itself. The healing power is in the tissues within the body. The blood is the great healing agent. Improved quality and quantity of blood and increased movement of blood through diseased parts are the things most essential to be accomplished in dealing with a chronic malady of any sort. Hydriatric applications afford the most powerful of all means of awakening and increasing vital resistance in the body, accelerating tissue change, blood-making, and all the vital activities of the body which are essential to life and which participate in the defensive and curative processes.

In the eager search for new remedies and methods by which to combat this most formidable of human maladies, it is indeed singular that a method so well tested and proved as hydrotherapy should be almost universally overlooked. All sorts of measures for influencing the pulmonary mucous membrane have been devised, exploited and tested by practical experience and generally found wanting. Moist air, dry air, cold air, superheated air, air medicated with almost every known volatile agent, from the aromatic extract of pine leaves to malodorous sul-

[1] Read before the American Climatological Association, Washington, D. C.

phuret of hydrogen, have been applied to the mucous membrane of the lungs by inhalation, while the important fact that the pulmonary circulation and the respiratory functions not only in the lungs but in the tissues can be far more certainly and powerfully influenced by thermic applications to that wonderful organ, the skin, has been overlooked.

It is pretty well admitted on all sides that the open-air treatment of consumption with proper diet, carefully graduated exercise, especially contact of the body under proper conditions with cold air, constitutes a better means of combating pulmonary tuberculosis than any system of medication. Exercise and cold air are chiefly helpful by their influence upon metabolism and movement of blood. Exercise influences especially the heart and respiratory movements, while cold air acts chiefly through the thermic impressions and the vasomotor changes and metabolic activities resulting therefrom. Patients who are able to exercise freely in the open air, if other conditions are favorable, generally improve, but the elevation of temperature and the tendency to emaciation so commonly present in this disease often interdict exercise and not infrequently require absolute rest. While rest favors the accumulation of residual tissue, it has the great disadvantage that it lessens excretion, diminishes respiratory movement, lessens the general movement of blood in the body, and lowers vital resistance. It is preferable to exercise only because exercise tends to produce elevation of temperature, even in normal conditions, and when the heat-regulating functions of the body are disturbed, as is already the case in a febrile state, even very gentle exercise may produce a very great elevation of the temperature curve. Elevation of temperature likewise gives rise to excessive oxidation of nitrogen, which is still further aggravated by exercise, thus causing muscular wasting and resulting weakness with lessened nervous and glandular activity.

The curative effects of cold applications to the skin are based upon the same principle, and act as do those of exercise and cold air. A cold application at first excites cardiac activity, the heart later being slowed by the increase of arterial tension which quickly follows a cold application. The peripheral heart, the small vessels of the skin and muscles especially are excited to increased activity, opening more widely, while at the same time their rhythmical activity is accelerated.

Thus, the general movement of blood throughout the body is accelerated while arterial tension is elevated. The irritation of cold when brought in contact with the skin raises the nerve tone as well as vascular tone, stimulating all forms of vital activity. It is in this way that the appetite is stimulated by exercise in cold air, by seabathing, by cold impressions made in any way. Pavlow, in his beautiful experiments for the purpose of determining the conditions which influence the secretion of the gastric fluids, showed very clearly the intimate connection between the appetite and the gastric secretion. He observed that the stronger the appetite the greater the amount of secretion. The absence of appetite, especially in febrile conditions, is a clear evidence of a lack of digestive power. There is abundant experimental evidence to support the power of cold cutaneous applications to stimulate the production of hydrochloric acid and gastric ferments. Cold applications to the skin likewise stimulate respiratory activity. A dash of cold water upon any portion of the body, especially upon the chest, produces very deep involuntary inspiration by exciting the respiratory centers. After a general cold application or the application of a cold chest compress, there is a marked increase in the depth of the respiratory movements for a considerable length of time. The amount of tidal air may be increased, as shown by my own experiments with the cold towel-rub, immediately after the application 33 per cent., forty minutes after 10 per cent.; wet sheet-rub immediately after 36 per cent., thirty minutes after 12 per cent, and an hour after 8 per cent.; the chest-pack, immediately after 33 per cent., thirty minutes after 18 per cent., and an hour after 4 per cent.; and cold mitten-friction immediately after 39 per cent. and thirty minutes after 8 per cent., on the respiratory volume. The respiratory quotient is also increased, showing the enormous increase in the absorption of oxygen by the blood and the oxygenation of the tissues.

Hydrotherapy is thus not only a powerful ally of the open-air treatment of pulmonary tuberculosis, acting as an adjunct of exercise, sunlight, cold or cool air, proper diet, and other hygienic conditions and physiological measures, but it is actually indispensable in a large number of cases in which the patient is so feeble, either from loss of blood or reduction of strength by some other cause that the advantages of the open-air method are only in small part available. In these cases hydriatric measures properly adapted to individual cases serve as a substitute for cold air and exercise and have the advantage over both these measures in the fact that they are capable of absolute regulation and graduation, awakening within the system the same reactions more or less ample and intense as may be desired and thus serving as a means by which the patient may be lifted from a state of utter helplessness by daily increments of energy until he becomes capable of utilizing with advantage more vigorous measures.

Hydrotherapy is of special value during the hot months of the summer season, which are exceedingly trying to the tuberculous patient, as a means of antagonizing the debilitating effects of heat. Observations with Mosso's ergograph show that extreme muscular and nervous exhaustion resulting from the hot bath may be instantly removed by a cold application. Not only is the depressing effect of the hot bath wholly antidoted by the succeeding cold application, but the output of energy may be raised even above

the normal level. During the winter months when out-of-door exercise is in many localities not infrequently prohibited for weeks at a time by inclement weather, except in cases of those who have been systematically trained to endure contact of the cold bath, hydrotherapy is invaluable as a substitute for the tonic influence of cold air and exercise.

Hydrotherapy affords the most valuable of all known means of training the skin. General cold applications may be properly termed "vasomotor gymnastics," in which not only the skin but the vasomotor centers controlling the cutaneous circulation are brought into vigorous exercise. By the daily repetition of the cold bath systematically graduated from higher to lower temperatures,

COLD MITTEN FRICTION.

Fig. 1.

the ability of the skin to react quickly to thermic impressions may be enormously increased. A healthy well-trained skin contracts vigorously when a cold impression is made upon it. Not only the blood-vessels, small arteries and veins, but also the lymphatics, even the capillaries, and all the muscular structures of the skin contract, thus lessening the blood-supply and preventing the undue cooling of the blood which gives rise to chill and taking cold. In no class of cases is this training of the skin and the protection which it affords more necessary than in cases of pulmonary tuberculosis. The cold bath affords the only means by which this training can be accomplished, and hence it is indispensable to the rational treatment of this malady.

Cold water is a physiological tonic and has the advantage over medicinal tonics of all sorts in that it awakens nervous activity without the imposition of any extra burdens upon any vital organs and without hampering the activity of any function. The cold bath employed in such a manner as to produce tonic effects accomplishes its results by increasing vital resistance to the causes of pathological processes by making the wheels of life run more smoothly, by lifting the whole vital economy to a higher level. The impression made upon that harp of a million strings —the skin, with its vast network of sensory, motor, sympathetic, vasomotor and thermic nerves, arouses every nerve-center, every sympathetic ganglion, every sensory and motor filament in the entire body to heightened life and activity. Every blood-vessel throbs with quickened impulses, the whole being is translated into a new state of existence.

A person who has never experienced the glow of exhilaration, the invigoration and buoyancy of body and mind which accompany the state of reaction from a short, general cold application, cannot well appreciate the value or significance of the cold bath as a physiological stimulant. It is not too much to say that it is of all measures known to man the most valuable as a means of arousing to activity the flagging energies of the body and of lifting the enervated invalid out of the organic and functional disorders of chronic diseases.

The tonic effects of cold water are unquestionably, to a large degree, due to the influence of cold impressions acting through the nerves of the skin upon the sympathetic nerve-centers. The awakening of the sympathetic to renewed activity, or a balancing of its action, is what is especially needed by the great majority of chronic invalids. The functions of the brain and spinal cord, and through them all forms of nervous activity are, to a considerable extent, influenced by the sympathetic. The sensation of well-being which accompanies the reaction following a general cold application is largely due to the increased activity of the cerebral circulation brought about through the stimulation of the sympathetic. By its power to influence the sympathetic, hydrotherapy is capable of controlling, reorganizing, balancing, all the processes of organic life, and through them, modifying the functions of animal life to a marvelous degree.

The methods by which the powerful restorative effects of water may be obtained are exceedingly simple. They do not require elaborate apparatus or hospital appliances, although they do require the use of judgment and discretion in their application.

The general method pursued by Aberg consists in the application of cold water, the intensity of the application being systematically increased. Aberg divides his hydriatric applications into three grades, which may be briefly described as follows: (1) Bathing of the face, neck, and the anterior and posterior surfaces of

the chest with a sponge dipped in cold water and wrung dry. The application is at first very short, and is immediately followed with drying and friction of the parts. The patient remains

WET SHEET RUB. (First Step.)

Fig. 2.

covered in bed or exercises in the open air until reaction is complete. The application is first made but once a day—in the morning. Later both morning and evening, the sponge wrung a little less dry each day. (2) Cold water is poured over the head, neck, face, back and breast of the patient from a watering-pot, each part being gone over one or more times as the treatment progresses. The parts are then dried and rubbed as before, and reaction promoted by rest in bed or exercise. (3) Immersion of the whole body in the full cold bath, followed by immediate drying with vigorous rubbing. The bath is of very short duration (2 to 6 seconds).

Ice-water is used for the sponging and sprinkling with a watering-pot. Water at a temperature of 45 to 54° F. is used for the full bath. Aberg claimed for his method the suppression of the night-sweats and fever within a few days after the beginning of treatment in most cases, and a notable increase in appetite and body-weight, often very rapid and marked, and improvement in all respects.

The method of Winternitz is somewhat less heroic than that of Aberg. He employs ablution in place of sponging and wet sheet-rubbings (45 to 48° F.) in place of the sprinklings; and the cold rain-douche or plunge-bath at 54 to 58° F. Winternitz employs also the chest-pack, of which Aberg seems to make no use.

The method which I have formulated and from which I have seen excellent results differs somewhat in detail, although not in principle from that pursued by Aberg and Winternitz. Four different sets of procedures are employed for producing general effects, each of which is capable of being graduated to any degree desired. These are as follows:

1. Dry friction of the whole surface with the naked hand or with the hand protected with a friction-mitt. The friction should be continued until the surface is warm and vigorous cutaneous circulation well established. The dry friction is followed by friction with the hands dipped in water at 60° F. The temperature of the water is lowered one or two degrees each day until ice-water is used, and the number of dippings of the hand in the water is each day increased. The parts are carefully rubbed, then dried, and rubbed with the hand until warm and red. This application should be made twice a day, in the morning before the patient rises and at night after retiring.

2. Cold, wet friction with the friction-mitt (Fig 1) dipped in water, extending over the whole surface of the body to be applied first,

WET SHEET RUB. (Second Step.)

Fig. 3.

once daily, preferably in the morning, later, twice a day, in the evening as well as in the morning, application being substituted for the wet hand-rubbing. The application should be made

to small areas of the skin in succession, each part being rubbed until red, then well dried, and rubbed with the hand before extending to another area. The patient should not be allowed to become chilly. The temperature of the water should be at first 60° F. and then should be gradually lowered from day to day until ice-water is employed. The rate at which the temperature is lowered may vary from one to two degrees daily to three or four degrees, according to the susceptibility of the patient. The patient, if feeble, should remain in bed until good reaction has occurred. If strong enough to do so, the patient should walk after treatment for fifteen to twenty minutes, or exercise moderately for an equal length of time in a gymnasium to promote reaction. If the reaction is not complete, pul-

WET SHEET RUB. (Third Step.)

Fig. 4.

monary congestion, cough, and other ill-effects will be apparent. The feet and hands, as well as the general surface of the body, should show good reaction, as indicated by warmth and natural color. Coldness of the hands and feet after the operation indicates defective reaction and requires heating processes of some sort, as short fomentation to the spine, or warming of the hands and feet by means of rubber-bags filled with hot water, or immersion in hot water for a few minutes before the application and more thorough rubbing in connection with the cold application (Fig. 2).

3. The wet rubbing-sheet at 60° F., the temperature being gradually lowered to 50° F. This application is best made in the morning when the patient rises warm from the bed. It should be taken in a warm room. After the application, if the patient is feeble, he should return to bed and remain there until thoroughly warmed, but, if strong, he may exercise moderately for fifteen to twenty minutes to promote reaction. The duration of the application should be one to three minutes. If the patient's temperature is subnormal in the morning, the application should be made later, as at 10 or 11 A. M. It is well in such cases also to precede the cold application by heating the skin by the sun-bath, the electric-light bath, or the skin may be warmed by dry friction.

In the absence of other measures an improvised vapor-bath may be employed for two to three minutes, or the patient may be subjected to the action of a warm rain-douche, a hot full bath (104° F. for three to five minutes), a hot foot-bath, or a fomentation to the spine or abdomen. Great care must be taken to avoid sweating and overheating. The heating process should not last more than three to five minutes. If reaction is deficient, the patient may, for the first applications, stand in a hot foot-bath of 104° F. during the application of the cold sheet. To prevent congestion of the lungs under a general cold application, the chest should be rubbed with the dry hand or the friction-mitt until red before the application is made. The attendant applies the hand, after dipping the hand in ice-water, to the chest before and behind a few times with vigorous rubbing. The duration of the wet sheet-rubbing should not be more than thirty or forty seconds at first. The time may be gradually extended to two minutes. Two persons should be employed in administering the treatment, one to rub the legs, while the other is rubbing the arms and trunk. Great care should be taken to avoid chilling by evaporation, either before or after the rubbing. To prevent this the patient should be wrapped in a woolen blanket until everything is in readiness for the application of the wet sheet. Then as the woolen blanket is withdrawn the wet sheet is applied as shown in Figs. 2, 3, and 4, and the procedures already described carried out with vigor and with discrimination.

4. The fourth procedure begins with the warm rain-douche, temperature 100° F., for one minute, while a hot spray, 110-120° F., is applied to the legs for the same length of time. The application terminates with the cold rain-douche, 60° F., for ten seconds. The duration of the application should be gradually increased to 30 seconds. Immediately after the application the patient should be wrapped in a Turkish sheet and thoroughly rubbed by two attendants until reaction is well established. Complete reaction should be secured by wrapping in blankets for a few minutes, or by moderate exercise.

[To be continued.]

BRONCHIAL DISEASE NOT INVARIABLY A CONTRAINDICATION FOR ETHER ANESTHESIA IN ABDOMINAL SURGERY.[1]

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My personal experience in surgical anesthesia embraces some 8000 cases, representing minor and major operations done by me in private houses, private and public hospitals. Ninety-four per cent. of the patients were women. My obstetrical work comprises more than 3000 deliveries, 2000 of these under chloroform anesthesia. As a rule, it was not employed until the second stage of labor. This reference to obstetrical work is incidental, since it is, of course, not included in the 8000 cases. It may, however, show that I have not presumed to speak without the authority of some experience upon the general subject.

So convinced am I of the greater safety of ether than of chloroform as an anesthetic in surgical work that in later years I uniformly selected it except in the presence of strongly marked contraindications—serious disease of the kidneys or of the respiratory organs. I have never lost a patient under ether or chloroform, although I have on several occasions witnessed very unsatisfactory symptoms.

In this brief clinical note I shall not discuss the general question of anesthesia. What I say applies to ether alone. Preparation of the patient and methods of administration must be briefly considered, because these matters are, in my opinion, vital to the desired results. Except in emergency cases I order free cleaning out of the bowels for a woman upon whom I am to make either abdominal or vaginal section. This is done by a saline purgative the day before the section, after which she must take no solid food. She is given coffee and cream three hours before the section, and four grains of calomel an hour before. Unless there are contraindications she is given morphine, gr. 1/6, and atropine, gr. 1/20, twenty minutes before the commencement of the anesthesia.

The ether is administered in the operating-room, with the patient on the operating-table. The temperature of the room should be 98° to 100° F. In all cases of weak heart, or where there is bronchial trouble, the table should be in the modified Trendelenburg position—*i. e.*, the chest of the patient should be six to eight inches lower than the pelvis and lower extremities. A hard pillow, some three or four inches thick, should incline the head forward, so as to facilitate free respiration, and to some extent guard against the falling back of the tongue during anesthesia. This position also favors the escape of mucus and broken epithelium, which may be very abundant, especially in patients suffering from bronchitis, when anesthesia has continued for some time. Nothing which has been said as to position relates to the surgical aspects of the case. If the full Trendelenburg position is desired, very well. Even in that position it is better if the head is carried slightly forward for reasons already named.

Quality of Ether. This is of prime importance in all cases. It is, if possible, still more important when the patient has bronchial or kidney disease. Impure ether is responsible for much of the danger attending anesthesia, for the undue irritation of the respiratory passages and for the nausea that follows an operation. For years I have avoided all anxiety as to quality of the ether used by ordering Squibb's anesthetic ether in one-quarter and one-half pound cans; pouring it direct from the cans into the inhaler, thus guaranteeing its purity and freshness. There may be other manufacturers equally successful, but as Squibb's ether has never disappointed me I have not changed.

Method of Administration.—This I consider important both as to immediate safety and subsequent results. It is certainly of great moment in patients with bronchitis. I greatly prefer the closed inhaler, if it is so constructed as to secure the ends in view without compromising disadvantages. Such an inhaler I here present. It is constructed simply of several thicknesses of paper, such as newspapers are printed on, cut and stitched together. It is so shaped that when placed over the face it includes the chin and nose. Two sizes are made, to fit large or small faces. It is covered by a slip or case made of thick muslin. This fits accurately. The free end of the slip must be long enough to reach, when applied, below the absorbent cotton, which is packed closely in the inhaler and upon which ether is poured to saturation at the commencement of the session. As a rule, no more ether is added unless the operation continues longer than forty minutes. The inhaler is made by my nurses and requires but a few minutes to construct. It is cheap and simple. In no case is the absorbent cotton used the second time, and in no instance is the case of muslin to be used again until it has been washed and sterilized by the same treatment as that given my gauze sponges. The paper cup may be used repeatedly, only requiring to be sterilized by hot air. During the inhalation the anesthetizer places the hood closely to the face, holding it in position by compressing the two sides firmly against the bridge of the nose with the index finger and thumb of one hand, while with the fingers of the other hand the opposite wall of the inhaler is pressed against the chin. Thus the inhaler fits rather snugly at every point.

A very small quantity of atmospheric air will, however, pass continually through the texture of the inhaler, and a small quantity will pass in about the bridge of the nose. The quantity of air can readily be increased at this point without removing the inhaler, should evidence of cyanosis demand it. It should have been noted that there is a considerable space in the inhaler, when applied, between the nose and mouth of the pa-

[1] Read before the American Gynecological Society, Washington, D.C., May 2, 1900.

tient and the cotton containing the ether. This is a reservoir for the ether vapor and the carbon dioxide, which in a warm state is being inspired. This mixture is, of course, mechanical, not chemical. The relative proportions of the agents are constantly modified by the conditions of the patient, the profoundness and the duration of the anesthesia.

I consider this mixture desirable for reinhalation from a moderately close inhaler. First, because it is far less irritating to the respiratory mucous membrane either in the pharynx, larynx, trachea, larger or smaller bronchi; second, such a mixture has the dual action of stimulating the capillary circulation in these membranes, so as to modify the character of congestion present in acute, subacute, and chronic bronchitis when present, followed by rapid relief in crisis by expectoration, and the sedative action sought by the use of other remedies in such cases, but too often sought in vain; third, the quantity of ether necessary to secure anesthesia for a given length of time is greatly diminished. This avoids an element of positive immediate danger, that of overcharging the system with ether, thus endangering the respiratory and cardiac centers. It also guards against possible damage to the kidneys, relieving them from the necessity of the removal of an excessive amount of ether subsequent to the operation. The same may be said of the lungs, through which also a good proportion of the ether which has been absorbed must be removed. My clinical observations justify me in saying that in properly selected cases ether anesthesia, instead of aggravating bronchial disease when it exists, or of exciting it in cases when it does not exist, becomes, when properly managed, a most valuable curative agent.

Within the past five years I have had evidence that bronchial disease was seriously aggravated by ether in but a single patient. But I must be more specific as to the method of administering. It is important that the patient is tranquil, not excited by fear. She will have confidence in no one so much as the surgeon who is to operate. It is my custom in private and in private hospital practice to administer the ether myself until unconsciousness is secured. If proper asepsis has been observed my hands can be sufficiently cleaned again in a minute so that I may proceed with the operation. Before the inhalation is commenced I seat myself near the patient and speak to her words of kindness and of assurance, asking that when she commences the inhalation she will breathe naturally. It is wrong to ask the patient to breathe deeply. Shallow breathing at the start will go far to avoid the reflex coughing excited by irritation at the tracheal bifurcation. The inhaler is held two or three inches from the face until five or six inspirations are made; it is then placed closely over the face and continued until reflex coughing occurs. Usually this will not take place until after a number of inspirations, in some cases not at all. When coughing and resistance occur the inhaler must be removed far away so that unmixed air can be breathed. When quiet is restored the inhaler is reapplied, and the patient, who is of course yet fully conscious, is requested to avoid resistance. After four to six inspirations with the inhaler near the face it is now placed closely down when usually no further coughing or resistance will occur.

In the last series of 100 consecutive cases anesthetized in my private hospital prior to my sale of the hospital, of which accurate records were kept, the average time required for complete anesthesia was six minutes—in many cases it was accomplished in four minutes. Struggling was rare, indeed, and not in any patient did damage of the lung or kidney follow. It has already been stated that if the cotton in the inhaler is saturated at the commencement full anesthesia will be sustained usually for forty minutes without adding more ether. Of course, the inhaler must be constantly applied, as it should be, unless some symptom should demand that the patient have fresh air. If the operation requires more time more ether must be added; but when added caution must be observed lest the patient, whose system is already well charged, receives an overquantity. Thus, notwithstanding the cotton is again filled to saturation the inhaler must not be held too closely over the face until the effects are observed. The frequent additions of small quantities of ether to the inhaler, awaiting resistance of the patient as a signal for more, is mentioned only to be condemned. It is not the quantity of ether placed in the cotton which is to be considered but the quantity that enters the circulation. Of course, the administration of ether from a close inhaler, so that the patient reinhales the vapor mixed with carbon dioxide, is neither new nor novel. It is advocated by many and condemned by more. But as far as I know, excepting the fact of the lessened amount of ether required, and the extension of the practice to include cases of bronchial disease, the reasons for such practice have not been advocated as the clinical facts warrant, nor have the details of conditions essential to the best results been urged with sufficient emphasis.

I am also aware that Clover's inhaler and others are constructed for reinhalation. These I have used frequently, but my objection to such inhalers is that the admixture of the ether and the carbon dioxide does not commence at the commencement of the session and is not automatically continued—also that the quantity of atmospheric air admitted, if any, is not regulated. Again, such an apparatus requires more skill and judgment on the part of the anesthetist. Finally, the inhaler is cumbrous to carry about and difficult to keep clean. The inhaler which I show you is too simple to be called an inhaler. It is simply a modification of the old paper cone and sponge, but it has essential differences in principle.

In my private work the anesthetic is, as a rule, administered by one of my nurses with my as-

sistance and under my supervision as already noted. I am aware that this course is open to criticism. It should be remembered, however, that I do not impose the custom upon others. Finally, notwithstanding the increased blood-pressure in the earlier stages of ether anesthesia, and notwithstanding the high temperature of the air in the operating-room, at the close of the operation, especially if it has been prolonged, the body temperature of the patient is now reduced one-half to one degree; the capillaries are relaxed, and she is bathed in perspiration. It is therefore plain that the greatest caution must be taken in removing her from the operating-room to her own room. I have often seen patients, with insufficient clothing, wheeled through cold corridors after operation. Thus often is occasioned the bronchitis, pneumonia, or kidney disease falsely attributed to ether.

The following cases, briefly abstracted from my private hospital records, may illustrate the subject.

Case I.—Miss F. C., aged twenty-eight years, entered my private hospital January 9, 1895. Had been under my observation and care for a year. Had suffered from unbearable dysmenorrhea, and had had two attacks of pelvic peritonitis; was now having occasional attacks of hystero-epilepsy. She and her friends were anxious to have the ovaries removed. During the past six months she had suffered from bronchial cough. For the last six weeks the expectoration was characteristic and copious. Patient had lost twenty pounds in weight. After proper action abdominal section was made and the ovaries removed January 28, 1895, assisted by Drs. C. L. Bonfield and Edward Mitchel. Left ovary enlarged and cystic; the right hard, half-size; extensive adhesions. Ether was administered with the patient in the Trendelenburg position. Frothy mucopurulent discharge through the mouth and nose during anesthesia was very abundant, causing much embarrassment and prolonging the time required for securing unconsciousness to nine minutes. The position of the patient, however, facilitated the escape of this secretion. The operation lasted, including closing of the abdominal wound, thirty minutes. Temperature at the commencement of anesthesia, 99.5° F., at the close of the operation 98° F. Recovery was uninterrupted; cough and expectoration continued for ten days, but rapidly diminished after the second day. The patient was allowed terraline and sherry wine for the cough. Temperature was at no time after the operation over 101° F. Within six months the patient had gained twenty pounds; has now gained thirty-four pounds. Health perfect.

Case II.—Mrs. F. H., aged thirty years, entered my private hospital February 11, 1898; married nine years, no children; one abortion seven years ago. Had menstruated regularly, but during the past year had noticed at irregular intervals discharge of blood from the vagina; recently it has been more profuse; odor and pain were absent. Patient has lost in weight and is anemic; has distressing cough, which has continued during the past month, but with little or no expectoration. This morning, however, after a journey of 150 miles by rail, expectoration of frothy mucopurulent matter is rather abundant. She has a temperature of 100° F.; pulse 90.

Examination of the chest shows moist râles, with gurgling squeaking, etc. Expiration prolonged. No dulness on percussion. Mucous membrane of fauces and pharynx thickened and redder than normal. Diagnosis: Bronchitis, second stage.

Examination of the pelvic organs shows vaginal portion of the cervix half destroyed by carcinoma; uterus freely movable; no perceptible involvement of glands. Decided upon vaginal hysterectomy, to be done as soon as the bronchial difficulty and general condition would justify operation under the approved general treatment. The patient did not improve; cough was distressing, expectoration now occasionally showing streaks of blood. Vaginal disinfectants and astringents per vaginam kept up. Loss of blood from the uterus increasing. Decided not to wait longer. Removed the uterus by vaginal section on February 16th. Four clamps; no ligatures. Present and assisting Drs. C. L. Bonfield and William Gillespie. Ether until unconsciousness, administered by myself, then continued by Miss Pullen, the head nurse. Time required for full anesthesia twelve minutes, as the cough and expectoration were very annoying. Much frothy mucus, some of it well colored with blood, was discharged. During administration the patient was in the Trendelenburg position, but head elevated somewhat. Not any vomiting after operation. At the close of the operation the temperature was 99° F.: at the commencement of inhalation it was 100° F. The patient reacted well and made a speedy recovery. The temperature at any time after the operation was not over 101° F. The cough and expectoration yielded as if by magic; she had absolutely no cough after the second day. The bronchial symptoms never returned. A report from this woman one month since shows her in perfect health; she has gained thirty-five pounds in weight.

My record shows a number of cases anesthetized and operated on when bronchitis in the first stage, acute form, was present, with the result of arresting cough and destroying the mucous congestion present; but the length of this paper forbids my giving further details or recital of cases.

Finally, I reiterate the statement that my clinical studies justify me in the belief that in properly selected cases ether inhalation is positively curative of bronchitis. That its action in these cases is largely local I have no question. To avoid unpleasant complications and to secure the desired results, the following points are essential: (1) Proper preparation of the patient. (2) Preparation of the operating-room with a tem-

perature of 98° to 100° F. (3) Pure ether. (4) A proper inhaler. (5) The proper methods of administration. (6) Due caution against exposure in removing the patient from the operating-room to her own room. The temperature of her own room should not be below 80° to 90° F. for several hours after the operation. (7) Proper care of the patient during convalescence. She should be permitted to drink large quantities of water and should keep the bowels freely open.

CLINICAL MEMORANDUM.

PERSISTENT SLOW PULSE.

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Cases in which the pulse-rate remains persistently below forty are so infrequent as possibly to lend interest to the following case. The patient is a woman, aged thirty-one years, who has enjoyed very good health since childhood, except for an attack of grip about ten years ago when that disease was making its preliminary impression upon the American people and American medicine. The attack was not very severe, but during its course her physician called her attention to the fact that her pulse was very slow. Even during the occurrence of febrile temperatures, it did not reach sixty to the minute. Observations made after the attack of grip showed that her pulse remained persistently at about forty or under.

In the beginning of April of this year she came for treatment for loss of appetite and general indisposition. On examination her pulse was found to be thirty-six. Careful examination of her heart showed that this was also the number of the heart-beats. She has now been under observation for over three months and her pulse-rate has always continued about the same. After a rapid walk of over a half mile to the office it rises to 39 or 40, but it has never exceeded that. She considers herself in good health and is able to do considerable housework. Her duties require her to be on her feet most of the day and her work is rather exhausting. She has to go up and down stairs frequently but does not experience much difficulty. Her respirations are somewhat hurried. She breathes normally 22 to 24 times to the minute. The urine is normal, the arteries show no signs of arteriosclerosis, the liver is not enlarged and the organic functions are not disturbed by her slow pulse. Despite a pulse-rate of 36 she is by no means phlegmatic in temperament, but on the contrary is nervous and high-strung and inclined to be excitable.

Her family and early history do not seem to throw any light on her present condition. Her father is dead. Her mother is living and well and two brothers and two sisters are in good health. The other members of the family do not exhibit this phenomenon of slow pulse, at least as far as can be learned. Her mother often said that the patient was the healthiest of her children, but she had all the diseases of childhood and there was a family tradition to the effect that if a contagious disease existed in their neighborhood she was sure to catch it. She was lively and active as a child and played and jumped rope quite as other children did. Dancing was a favorite amusement later in life and some years ago, when the skirt dance was popular, she frequently danced it for the amusement of friends. After her husband's death and when it became necessary for her to earn her own living, she was on the stage for a time and danced without any embarrassment of the respiratory functions. She frequently danced in drawing-rooms and at private entertainments. It is only during the last two or three years that she has noticed that dancing has proved so exhausting to her that she has had to give it up almost entirely. In general, however, she considers herself as able as any one else for the duties and amusements of life. Under the administration of an ordinary stimulant tonic her digestive symptoms disappeared and her feeling of general good health returned. She complains somewhat of shortness of breath, especially when she ascends rapidly more than one flight of stairs. She has been warned of the danger involved in such overexertion. For this symptom of shortness of breath on exertion atropine, 1/200 of a grain, three times a day, gradually increased until she was taking 1/100 three times a day, had a beneficial effect. The drug had no effect upon the pulse-rate, but it seemed to slow and somewhat deepen the respirations.

The interesting question is whether the present case is one of natural slow pulse, the condition having existed all her life, or whether her pulse-rate of 36 has been acquired. The fact that there is no family history of slow pulse speaks against its congenital origin, although not very strongly. Direct heredity is sometimes an element in the occurrence of slow pulse, but is by no means a necessary implication of its occurrence or non-occurrence. The fact that the patient had all the ordinary diseases of childhood without her attention being called to the presence of a slow pulse seems to show that in her early years the slow pulse did not exist. It has been pointed out in a number of cases that grip may cause a slow pulse that persists for months and sometimes years after recovery. Not many cases are reported in which the slow pulse has persisted as in this patient for over ten years. It now seems probable that her present pulse-rate will continue throughout life.

Just what the lesion may be in a case like this is an interesting subject for speculation. Persistent rapid pulse has been set down by one enthusiastic theorist as due to a discharging or irritative lesion of the nucleus of the accessory fibers of the vagus nerve. In the same way we might say that the condition we have to do with

here is due to an irritative lesion of the inhibitory fibers of the vagus nerve. In either case the carefully-evolved hypothesis does not add anything to our knowledge of slow or rapid pulse and lacks the confirmation of a pathologic basis.

For cases like this the term bradycardia, or as Osler, following Riegel, prefers to call it, brachycardia, is sometimes employed. The name was invented as an analogue of tachycardia. It seems worth while to recall, however, that, as Clifford Allbut says, the status of bradycardia is very different from that of tachycardia. In tachycardia there is an affection that occurs paroxysmally, endures for a certain length of time and then is followed by a return to the normal pulse-rate. For what is known as essential tachycardia there is no well-defined cause and no definite pathologic lesion. The heart gradually or suddenly begins to beat two or three times as fast as before, and then after some hours or days returns to its normal condition. Slow pulse, however, is present as the result of some physiologic or pathologic condition. It endures as long as the cause continues to act and then ceases, usually not to return until the same cause gives occasion for it again, or it endures absolutely throughout life. Physiologically it occurs after childbirth. Pathologically it is seen during convalescence from the infectious diseases, as the result of brain tumors or abscesses or because of reflexes from organs to which are distributed peripheral terminal fibers of the vagus nerve. The most frequent cause of slow pulse is gastro-intestinal disturbance. Functional or organic cancer of various portions of the digestive tract frequently give a pulse below 60.

All of these affections characterized by slow pulse are very different from the condition known as tachycardia. The slow pulse in this patient will probably endure throughout life and there seems no good reason for calling it anything more than persistent slow pulse. A number of cases with a pulse-rate below 50 have been reported in which the condition was congenital. In none of them was there any discernible heart lesion. Some of the individuals were able to bear the strain of a good deal of exertion. One of them was a very successful English athlete. It is to be remarked, however, that this athlete died as the result of a so-called cramp while swimming. Other evidences of lack of resistive vitality are not wanting in similar cases. It is probable that the prognosis of these cases of slow heart is not very favorable. Statistics on the subject, however, are very meager and a more careful reporting of such cases seems desirable.

MEDICAL PROGRESS.

Plague Sputum.—That the sputa of plague patients suffering from primary or secondary pneumonia contain numerous virulent Yersin bacilli is a well-established fact. The persistence of this condition during convalescence has recently been investigated at Oporto by Dr. Métin. Sputa were obtained from eight pneumonic cases at various periods and injected into guinea-pigs. The results of these experiments indicate that the sputa retain their virulence for eight or nine days after the subsidence of the fever and then rapidly become harmless. All the animals inoculated within the first eight days succumbed to uncomplicated plague; those inoculated a day or two later became sick, but recovered; and those that received still later injections manifested slight or no ill effects. In view of these results the doctor considers it safe to regard the sputa as non-contagious ten days after the beginning of apyrexia. Experiments were also made with the blood-serum of patients convalescing from plague, who had not received treatment with antipest serum, for the purpose of explaining the infrequence of reinfection. Guinea-pigs inoculated with the blood-serum and, shortly thereafter, with a virulent culture of plague bacilli all recovered after comparatively mild illness. One pig which received the serum twenty-four hours after the culture died in ten days, the control animal having succumbed in three. Experiments on mice with older serum were less successful, although the animals all lived from one to thirteen days longer than their respective controls.

Hemorrhagic Grip Epidemic.—V. Grossule (*Gazz. d. osp. e delle clin.*, No. 27, 1900) gives the result of his observations in an epidemic of influenza, affecting seventy per cent. of the inhabitants of a rural district in Italy, where previous to the epidemic, only two or three cases of pneumonia were observed in a population of over two thousand people. During the epidemic nineteen out of thirty-six cases of pneumonia proved fatal; in these cases the hemorrhagic sputum was marked; in a few cases hemoptysis was present. Epistaxis was observed in many cases during the epidemic; some were so profuse as to require nasal plugging. Menorrhagia was a common symptom, even virgins and married women of all ages being affected; some patients previously suffering from amenorrhea sought treatment for the marked menorrhagia which persisted, in one case for seventeen days; in some the uterine hemorrhage was so profuse as to require vaginal tamponading. The frequency of these hemorrhagic manifestations occurring in so many different families and affecting both sexes, independent of age or previous condition, gives strength to the theory that they were caused by the specific poison of influenza.

Ulcer of the Stomach.—Despite active research in the last few years, no satisfactory explanation of gastric ulcer can be given, according to H. Weiss (*Centralbl. f. d. ges. Therap.*, Oct., 1900). Virchow's theory is still adhered to by many and it is conceded that in animals even large defects in the mucosa heal kindly unless a hyperacidity exists—the precise condition which

obtains in man. Pathologically a transection of the ulcer shows absence of the mucosa, remains of glands, thickened intima and organizing thrombi in the arteries, round-cell infiltration and thrombosed veins. In some cases aneurismal dilatation with consequent diminution in the nutrition of the coats has been found, other local disturbances in circulation may sometimes be traced to arterial disease, general visceral congestion or to pressure of tumors on the stomach. Less common etiological factors are trauma and infection, the latter acting by the localization of the infectious agent, by small miliary abscesses developing in the mucosa or by a circumscribed generation of toxins. Bacteria, however, disappear with the development of the ulcer. Apart from the fact that the indications for surgical intervention have been more clearly set forth, therapy can record but few advances. Rest and diet are still the important mainstay in medical treatment. The patient must be kept in bed for ten days. The epigastric area should first be cleansed with alcohol and sublimate, a pad with boric ointment and then a very hot flaxseed poultice applied, the latter to be changed every ten to fifteen minutes. At night a Priessnitz pack is used instead. After the tenth day the Priessnitz pack is used alone for three more weeks. In case of hemorrhage, poultices are not to be employed unless a quarter of a year has passed, instead a Priessnitz pack or an ice-bag is admissible. The patients should sip from one-half to one pint of lukewarm Carlsbad water half an hour before breakfast for four weeks. Sodium bicarbonate with or without bismuth is also good. The diet is slowly changed from liquid to soft and then to non-irritating solid food and in severe cases exclusive rectal feeding may at first be demanded. Another good means of medication consists in washing out the stomach and introducing bismuth, made into a thin paste with water, through the sound. In all cases medical treatment should be tried before surgical. The indications for the latter are (1) hemorrhage, especially the small, long-continued bleedings, but also in case of large loss of blood when these show a tendency to recur; (2) severe pain and frequent vomiting; (3) perigastritis or peritonitic abscesses; (4) acute perforation. The dangers of operation are slight. Of the two methods in vogue, pyloroplasty and gastroenterostomy, both are equally good, but the first-named is the simpler.

On Gonorrheal Arthritis.—It is not so long ago since gonorrhea was looked upon as a slight affection, leaving no ill-effects in its wake. Now it is understood that endocarditis, myelitis, anterior horn changes, myocarditis, iritis, peritonitis, and, most common of all, arthritis, may follow a simple gonorrheal urethritis and seriously aggravate this distorder. B. Rubinstein (*Berlin. klin. Woch.*, Sept. 10, 1900) speaks of four varieties of the arthritis: (1) Gonorrheal hydrops; (2) serofibrinous inflammation; (3) empyema of the joints, and (4) phlegmonous inflammation. The last-mentioned form in particular may be serious. Tendons, sheaths and bursæ are also vulnerable to the poison and bursitis beneath the Achilles tendon is both common and difficult to heal. Attention is drawn to the value of the Röntgen rays in determining to what extent the joint and the bone are involved. The best treatment consists in the administration of potassium iodide internally and the application of guaiacol or creosote vasogen externally, and, for the more severe forms, irrigation of the joint with bichloride, 1-2000, care being taken not to allow any of the solution to remain in the joint. After the wound has healed, massage is to be instituted. The urethritis is to be treated at the same time, though sometimes, with very energetic measures, a lightening-up of the process is observed.

Acute Formalin-Poisoning.—J. Klueber (*Münch. med. Woch.*, Oct. 9, 1900) was recently called to a patient who had by mistake swallowed several ounces of commercial formalin. The man was unconscious, there was marked pallor and cold, clammy perspiration, the respirations were increased, there were râles over the lungs, the temperature, pulse and the various reflexes were normal, and there was neither paralysis nor vomiting. The most prominent feature was the coma, it being impossible to arouse the patient. The next morning the patient awoke several times, but soon fell back into his somnolent condition and anuria set in. At last, toward evening, the coma disappeared, the patient acted as if intoxicated, had some headache, conjunctivitis and the buccal mucosa was reddened. The next morning he was restored to health. Throughout the illness formic acid could be detected in the urine.

Treatment of Typhoid.—H. Eichhorst (*Therap. Monatshft.*, Oct., 1900) says he has tried typhoid serum with absolutely negative results, but has been surprised at the remarkably short and favorable course those cases ran which had received antityphoid extract of Tez. Eichhorst believes in absolute rest to the nervous system. Many minor details, such as darkening the room, are of the highest importance. Baths he gives at 95° F. for from fifteen to thirty minutes twice daily until there is no fever for seven days, then once a day. During the febrile period the nutrition should consist of easily-digested food, leaving little feces. Milk answers this purpose admirably and is especially good since also diuretic. It should be boiled and then placed on ice and every half-hour from two to three ounces are to be taken. If the patient objects to milk, it may be masked in coffee, tea or soup. Some variety may prove beneficial; beef-soup with one or two fresh eggs is excellent to break the monotony. All artificial proteid foods are to be discarded as objectionable to the taste in the long end. There is no objection to plenty of

water; it quenches the thirst and flushes out the kidneys. Strict attention is to be paid to cleanliness of the mouth for which purposs aluminium acetate, 1-100, or chlorate of potash, 1-40, is available. The same routine treatment is continued for the first three days that the temperature is normal, on the fourth, fifth and sixth days a farinacious soup, at first thin and later thickened, is allowed. On the seventh day the patient gets from two to three ounces of finely-chopped raw beef and on the tenth day mashed potatoes and roast veal. Bread is permitted with the meat, at first in the form of zwieback soaked in milk. There may be an advantage in giving small doses of salol during convalescence.

Pharmacology of Jaborandi Alkaloids.—C. R. Marshall (*Brit. Med. Jour.*, Oct. 13, 1900) accepts Jowett's analysis of jaborandi as containing three alkaloids, pilocarpin, isopilocarpin and pilocarpidin. Isopilocarpin has an action similar to pilocarpin, but is much weaker. Pilocarpidin is practically inactive. In a further note on the action of the liquid extract, they show that this preparation of the British Pharmacopœia is extremely variable, that it should be excluded and that, until preparations properly standardized for the pilocarpin and isopilocarpin are introduced, the drug should not be employed.

Hemorrhagic Diathesis in Typhoid.—A. Pinard (*Gazz. d. osp. e delle clin.*, No. 27, 1900) narrates the history of a thirteen-year-old boy, whose family and personal history as to hemophiliac tendency was negative. Three days after convalescence from a mild attack of typhoid fever and directly following the ingestion of a hearty meal the lad was found in a profound state of collapse, with delirium, high temperature, rapid pulse, tympanites, diarrhea and all the symptoms of a relapse of typhoid fever, except that the characteristic eruption was absent; instead, there was an eruption of small discrete red macules not disappearing on pressure, being located on the sternum, extensor surfaces of the arms and inner aspect of the thigh; the eruption soon became hemorrhagic in character, with some confluent patches, the area of which varied from that of a pea to a dime. On the following day there were epistaxes, hemorrhages from the gums, bowel and bladder, all of which were so frequent and so profuse as to leave the patient in a highly anemic condition, with stupor and almost extinct pupil reflexes predominating. Under active administration of ergotine by mouth and subcutaneously in addition to the usual typhoid sponge-baths, the patient began to improve; in two days the hemorrhages had ceased and the boy began to improve, recovering after a lenghty convalescence.

Gall-Stone Impaction.—The differential diagnosis between obstruction in the cystic and in the common duct comprises the following features, states F. A. McGrew (*Phila. Med. Jour.*, Oct. 6, 1900): The cystic duct syndrome is gall-stone colic with pain, rigor, vomiting, fever collapse. The pain is excruciating and referred to the right hypochondriac, umbilical or epigastric regions. The common-duct clinical picture varies only in that the pain is referred to the right hypochondriac, right subscapular or right shoulder regions. If the impaction in the cystic duct is permanent we find tenderness in the right hypogastrium to pressure, soreness and dragging pain in the right side, retention cyst (dropsy) of the gall-bladder which forms a slowly-increasing, palpable tumor in the right side of the abdomen. If the lodgment of the stone in the common duct be fixed there will be also tenderness and discomfort in the right hypogastrium, jaundice, bile in the urine, absence of bile in the stools, fatty, clay-colored, offensive stools, constipation, slight distention of the gall-bladder, enlargement of the liver, pulse slowed to 60, 50, even 40, nervous signs of cholemia. On the other hand, if the offending body be only temporarily arrested in the cystic duct, it may slip into the bladder and manifest its presence solely by attacks of slight hypogastric pain and tenderness with colic and some digestive disturbances. If more than one stone be present or the bladder be distended by them, they can be felt as such or grating sounds heard. If the stone slips into the common duct and there stops the syndrome at once becomes that of its site.

Gall-Stones and Appendicitis.—A. J. Ochsner (*Phila. Med. Jour.*, Oct. 6, 1900) says that during the past few years he has noted the coincidence between chronic appendicitis and gall-stones and *vice versa*. So much so that in many patients in whom the gall-bladder and passages have been diseased he has found the appendices showing proofs of previous attacks of inflammation. Many of these organs have been thickened, adherent, folded and distorted upon themselves, cicatrized, stenosed or containing fecal calculi, thick mucus or even pus. Since many authorities claim that the greatest single agent in the production of gall-stones is infection and since it has been abundantly established that during appendicular invasions the colon bacillus and other intestinal germs are greatly multiplied throughout the intestinal tract and since access to the gall-bladder may be had directly through the upper bowel and the bile-ducts or indirectly through the circulation of blood or lymph from an inflamed appendix, it appears rational to believe that in the foregoing three factors lies the explanation of the concurrence of these two diseases. Again in support of the infection by indirect avenues is the fact that when the common bile-duct is obstructed or ligated in animals the passages and bladder rapidly grow germs, which may very well reach it through one of the roundabout ways above named. His observations are numerically meager, as they cover only three months early this year, the first period consistently devoted to collecting data. Of eighteen cases of gall-stones six had appendicular lesions,

while of sixty cases of appendicitis (including the six above) 10 per cent. had gall-stones. These last observations are not satisfactory, because in a very great number of the acute appendicites circumstances of local and systemic conditions prevented examination of the gall-bladder. His method of exposing both regions is a long vertical opening of the right rectus sheath.

Gastric Motility.—There has been a great advance during the past few years in the perfection of methods for testing the functions of the stomach. A. Macfarlane (*N. Y. Med. Jour.*, Oct. 20 and 27, 1900) says that the numerous neurotic disturbances, so common and so confusing in stomach affections, have very little if any influence on its motor functions. Marked diminution in gastric motility almost always excludes a neurosis, while its presence indicates a serious lesion. The secretory and absorptive powers are not essential to health, as is shown in some cases of achylia gastrica and in total extirpation, but even slight impairment of motility induces marked gastric symptoms, manifested by the dilatation of the stomach and retention of food beyond the normal period. The symptoms are pressure and fulness after eating, rumbling and splashing, nausea, vomiting, epigastric distress or pain, constipation and great thirst. Of these vomiting, especially of food eaten days before, markedly sour and showing three layers, the intense thirst and diminished diuresis are characteristic. To determine the dilatation several methods are used. Inspection may sometimes show peristaltic movements indicating a stenosis and hypertrophied wall. Percussion is frequently helpful. Splashing is important only when obtained several hours after a test-meal. Dilatation by gas forced through a stomach-tube is very efficient. The most reliable sign of motor insufficiency is the presence of food after the normal time. By eating raisins, grapes or berries and swallowing their seeds in the evening and then taking a test-meal in the morning, the motility of stomach may be roughly determined from the presence or absence of the seeds. Or fifteen grains of salol may be given and if it is not detected in the urine until later than seventy-five minutes after ingestion and continues to be present after from thirty to thirty-six hours, then a motor insufficiency is present.

Persulfate of Soda, or Persodine.—After discussing the toxicity, the properties, and the results of numerous experiments upon animals with the persulfate of soda, or persodine, G. Milian (*La Presse Méd.* Oct. 6, 1900) says that the drug, chemically pure in solution, is a substance very slightly toxic and can properly be included among our drugs. Its principle properties are antiseptic, antithermic, aperient and digestive, and an aid to nutrition. Of these properties its aperient and digestive action is most prominent. Secondarily it excites an improvement in nutrition and an increase in weight. Persodine is indicated especially in early tuberculosis, in convalescents from acute illnesses in which the digestive functions are illy reestablished, in chlorotics, in neurasthenics and hypochondriacs who have at the same time gastric atony. The dose of persulfate of soda, or persodine, for an adult is 20 centigrams, or a tablespoonful, in solution in a glass of water. For a child a tea- or dessertspoonful is the dose. It should be taken each twenty-four hours one hour before the principal meal. At the end of three or four weeks the drug should be discontinued to avoid the patient's becoming accustomed to it. Give the drug a little later if the appetite appears to become poor again. Milian says that the only inconvenience from the drug is the appearance, sufficiently rare from other causes, during the first forty-eight hours, of a mild diarrhea which soon disappears. The solution has no disagreeable taste and is easily taken by patients.

Acute Nephritis Following Influenza.—One of the more rare complications of influenza is nephritis. R. G. Freeman (*Arch. of Ped.*, Oct., 1900) cites a number of writers on the subject, giving a résumé of such cases of nephritis complicating influenza as have been recorded, and reports a case of his own. His patient was a boy, four years of age, who had had an attack of influenza during each of the three previous winters. The last and fourth attack presented the usual symptoms for a month, when the patient's temperature rose to 102.5° F. and five days later to 105° F. The temperature then went down until, after four days, it was between 100° and 101° F. On this day the patient passed some very red urine, only about two ounces, which contained considerable blood, 5 per cent. by bulk of albumin, and casts, both hyaline and containing blood-cells. About one week before this the urine had a specific gravity of 1022 and contained no albumin and no blood. The day after the red urine was passed the patient's temperature became normal and remained so, but the boy passed urine only in small amounts, varying from six to fourteen ounces a day. The blood continued in the urine for five days and the casts for ten days. At the end of this time there was no albumin or casts in the urine and it was passed in the normal daily amount of about thirty ounces. No edema was present. The child got well and has had no recurrence of the albuminuria during the following year. Two months later, however, after the child had a slight disorder of the bowels with diarrhea, he passed no urine during one night, and the next morning passed about half an ounce which was very red, specific gravity 1050, and contained considerable deposit. There was no albumin, casts or blood, but a considerable quantity of urates and phosphates present. This boy had, therefore, an acute nephritis of the form which most commonly complicates influenza. On this and a few other cases Freeman bases the fol-

lowing conclusions: (1) Although albuminuria is fairly frequent in influenza, nephritis is a rare complication. (2) The nephritis complicating influenza is clinically of the acute hemorrhagic type and morphologically shows toxic lesions. (3) It apparently attacks children more often than adults. (4) The kidney disturbance may appear a few days after the acute symptoms of the influenza, or as long as a month later. (5) The prognosis is good.

Treatment of Eczema by Red Solar Light.—The favorable results which Finsen has obtained in variola by the action of the red rays of the solar spectrum have stimulated W. Winternitz (*Sem. méd.*, Aug. 15, 1900) to experiment with an analogous treatment in subjects with eczematous lesions. In these attempts the eruptive regions, previously covered with thin silk stuff of an intense red color, were exposed directly to the solar light as long as possible (even as long as four hours in one case). In all the patients treated in this way, whatever the form of eczema that was present, Winternitz noted a rapid disappearance of the symptoms. The serous oozing, the cutaneous hyperemia and the inflammatory infiltration were diminished, then disappeared completely.

Treatment of Ulcerous Acne by Applications of Sea-Salt.—For atrophic or ulcerous acne which attacks most frequently the face and causes the formation of depressed cicatrices, Luithlen (*Sem méd.*, Aug. 15, 1900) has recourse with success to the use of compresses soaked in a one- or two-per-cent. solution of sea-salt applied at night to the affected part. In the daytime these compresses are replaced by a pomade containing from one to two parts of sea-salt to a hundred of lanoline. Under this treatment the ulcers soon became clean, then filled up a little; the infiltrations did not ulcerate again, but retracted rapidly, and no new eruption appeared.

Bubonic Plague.—Owing to the presence of several cases of the plague recently appearing in our large sea-coast cities, all physicians should possess sufficient information in regard to the disease to enable them to make a diagnosis and prevent unnecessary infection. The October *Practitioner* has devoted much space to discussions of this disease. J. Cantile says that the period of incubation is from three to five days. It may begin in one of three ways: (1) A sudden rigor followed by high fever, headache, giddiness, vomiting, epigastric pain, and extreme exhaustion; there may be apathy or delirium. (2) Some cases begin with fever, headache, loss of appetite, but with no mental disturbance. (3) In children convulsions frequently usher in the disease. Buboes may be present from the first, but no superficial glandular enlargement may be present at any time. A frequent picture of an early stage of the disease presents an excited, delirious patient, with features drawn and haggard. The eyes are sunken and injected, with a dusky hue around them. The pulse is full and about 100 or more. Respirations are increased, and hiccoughs or a dry cough may be present. A temperature of 101° to 104° F. is usual, but it may be as high as 107°. The tongue is swollen and the dorsum covered by whitish fur. The abdomen is tender and tense and pain is frequently present. Constipation is the rule. When buboes are present the patient may be sitting up with knees near the chin or lying on the side with the leg in a flexed position. The diagnosis is therefore not clear cut, and pneumonia, typhoid or typhus fever or peritonitis may be the diagnosis at the beginning. Pneumonia may be, however, due to the plague bacillus, this forming one of the types of the disease. Later the tongue becomes shriveled and dry and frequently cracks, assuming a mahogany color. Diarrhea with passages of blood may occur. The circulatory and respiratory systems, except in the pneumonic type, furnish no characteristic symptoms. Three-fourths of the patients have buboes, usually appearing in the inguinal, axillary or cervical region. Unilateral adenitis is the rule. The pain attending the adenitis may be excruciating, but as the mental state becomes affected pressure alone will elicit any response. The plague is usually fatal on the fifth or sixth day. The prophylactic method of treatment is summed up in one word, cleanliness. Haffkine's fluid for inoculation is furthermore a prophylactic of tried value. All persons dealing with plague patients should be inoculated. It reduces the chances of infection by 50 per cent. and the mortality by 80 per cent. Prompt symptomatic treatment and careful nursing are all important. Cathartics and medicines to stimulate the heart and circulation, to procure sleep and to allay delirium are indicated. The vigilance of the health officers in isolating cases and demanding disinfection becomes a paramount necessity.

Food in Zymotic Enteritis.—Milk food of any description is, in the majority of cases, badly borne during the early part of an attack of summer diarrhea. F. P. Elliott (*Bristol Med. Chir. Jour.*, Sept., 1900) says that it must be completely excluded from the diet at the onset and when vomiting is severe all food must be prohibited for twenty-four hours or more. That food must be given, if at all, only in small and oft-repeated quantities is a *sine qua non* in treating the disease. Boiled water or barley-water should, however, be frequently given. Later broths from mutton, veal and chicken, with the fat removed, form the most satisfactory diet. A return to milk should be made slowly, but as soon as possible. When milk continues to cause trouble raw beef-juice is an excellent substitute. The best way to prepare it is to chop up finely raw rump steak and allow it to soak in four times its bulk of cold water for half an hour. The meat is then squeezed in a piece of muslin and the juice extracted. It should be kept cool and freshly prepared frequently. This may entirely replace the proteid of milk for several days.

THERAPEUTIC HINTS.

For Chronic Otorrhea.—

℞ Pot. iodidi..... 1. (grs. xv)
Tr. iodi .....10. (℥iiss)
Alcohol abs.....
Glycerin (pure) ..aa. 15 (℥iv)
Pulv. iodoformi..... 1 (grs. xv)

M. Sig., inject a small quantity of this solution into the auditory canal and down to the tympanum.—*Jour. de Méd. de Paris,* Sept. 30, 1900.

Amyloform.—Amyloform, a new successor of iodoform, over which it has the advantage of not possessing any odor, is a powder which has manifest bactericidal properties, retards the secretions, favors the formation of healthy granulations and does not exercise any irritant action either upon the wound or upon the neighboring tissues. Contrary to iodoform, amyloform can be sterilized in dry or moist heat without being decomposed. Because of this property, amyloform gauze affords some assurances of asepsis which are not found in the other antiseptic gauzes. An emulsion for preparing amyloform gauze is:

℞ Amyloform .... 5 to 10. (grs. lxxv to ℥iss)
Glycerin ..... 10. (℥iiss)
Alcohol ..... 50. (℥xiiss)
Ether ..... 40. (℥x)
Ol. ricini..... 0 gr. 50 (♏ viiss)

The indications for amyloform are the same as for iodoform.—*La Presse Médicale,* Sept. 15, 1900.

Cocaine in the Treatment of Intestinal Worms.—One of the inconveniences attending the use of the anthelmintics ordinarily employed, particularly of extract of male fern, consists of the vomiting following the taking of the medicament. In a case of this kind where the extract of male fern was not well borne by the stomach, Flesch had recourse to the administration, in addition to the male fern, of a solution of cocaine, of which the patient took a few drops from time to time in a little water before and during the ingestion of the capsules of extract of male fern. The solution of cocaine Flesch employed is formulated as follows:

℞ Cocaine ..... .15 (grs. 2¼)
Ext. belladonna..... .20 (grs. iii)
Aqua valerian ..... .10 (℥iiss)

The patient took in all 5 centigrams of cocaine. A purgative, calomel, given some hours later, brought about the expulsion of the tenia. The patient was kept in bed during the twenty-four hours that the treatment lasted.—*La Presse médicale,* Sept. 15, 1900.

Neurasthenia.—Hysteria, being a mental condition, says M. de Fleury (*Revue de Thérapeutique,* Sept. 1, 1900) should be cured by mental treatment, whereas neurasthenia, being the result of fatigue, requires tonic medication and rest. Of first importance is a selected but plentiful supply of food, with prohibition of alcoholic drinks or easily fermentable foodstuffs, and, on account of the poor quality of the gastric juice, but little liquid with meals. When the stomach is empty, however, large draughts of water help to flush out the kidneys and liver, and improve the nervous and mental condition. Baths, spinal douches, electricity, and massage tend to improve the blood and circulation, while the drug-treatment consists of calcium and sodium phosphate, the glycerophosphates, and the saline waters. Such stimulants as caffeine, kola, and their allies should be avoided. Isolation, forced rest in bed, superalimentation by gavage, the method of Weir Mitchell, ought to be reserved for the very severe and rebellious cases. Work, which at the beginning uselessly fatigues the patient and retards his cure, may later on become of much use.

Raynaud's Disease.—The general health must be looked after, writes J. T. Eskridge, and the affected parts well protected from the influence of sudden changes in the atmosphere. The pain may be relieved by:

℞ Ext. cannabis ind..... 0.01 (gr. 1/6)
Camphor. monobrom..
Caffeinæ citrat.....aa. 0.065 (gr. j)
Phenacetin ..... 0.2 (gr. iij)

and, if very severe, by hypodermics of codeine phosphate, 0.065-0.13 (gr. j-ij). Cates recommends nitroglycerin, 0.00065 (gr. 1/100), increased to 0.0013 (gr. 1/50), thrice daily for the relief of the arterial spasm. Massage is useful, with care, lest too vigorous manipulation of the affected parts result in abrasions or gangrene.—*American Text-Book of Applied Therapeutics.*

Tuberculous Knee in Children.—Camille Dupont advises systemic treatment at the outset. Keep limb in good position and immobilize the joint. In the peri-articular type allow walking without a brace, but require a brace in the osseous and synovial forms. For local treatment use compression and injections of camphorated naphtol, with chloride of zinc injections and tunneling of the bone in the peri-articular type. During convalescence allow the patient to walk slowly, and give gentle massage and salt baths.—*Journal de Médecine de Paris.*

Epilepsy.—The epileptic, being a depressed individual, is subject to digestive disturbances, so, by De Fleury's method of treatment, no water is allowed with meals, and the diet is such as to prevent gastro-intestinal fermentation. To eliminate toxic substances moderate exercise, purgatives, diuretics, and diaphoretics should be employed. Hydrotherapy, salt baths, massage, etc., with normal salt injections, are of benefit. Whatever affects arterial pressure may precipitate an attack. Combined bromides lower excitability of the cerebral cortex, and in nocturnal cases are given in large doses at bedtime. The author recommends quiet life in country villages.—Rommé in *La Presse médicale.*

The Medical News.

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SATURDAY, NOVEMBER 10, 1900.

THE ABATEMENT OF A COLOSSAL NUISANCE.

To the many in the profession, who for years have impotently nursed their outraged feelings at the constantly-increasing disfigurement of the landscape by both lay and medical advertisers, it will be a comfort to learn that a widely-organized effort is about to be made by the American Park and Out-Door Association to abate the nuisance. This society's plan of action, as outlined by the secretary of the special committee appointed by it to carry out the work, Mr. Frederick Law Olmstead, the well-known landscape architect of Brookline, Mass., shows such a broad and reasonable view of the matter that we feel certain of good results from its endeavors.

In a general way the Association proposes to instruct country landowners, from whose trees, fences, outbuildings, etc., the irresponsible advertiser announces his wares, of the meaning of such trespass and how redress may be obtained. It further proposes to limit the extension of the practice as carried on under purchased consent of landowners, by bringing communities to regard such purchased consent as a stigma of sordid vulgarity on the part of the landowners.

Through direct legislation the Association is less confident of accomplishing its aims, and yet if sufficient sentiment can be aroused, it feels that the course might be brought to reflect this public sentiment in their rulings. The specific ground upon which legislative aid is to be expected must be that of a public nuisance, and the difficulty here encountered is in bringing the courts to rule that objects offensive to the sight are nuisances. But even with this difficulty before it the society does not despair, because, as Mr. Olmstead says in his report, "The question of what is a nuisance and what is not seems to be wholly a matter of degree and of judgment, the courts of to-day, we understand, classing as nuisances many practices to which earlier courts found no objection. Mr. Olmstead says further, "A city, let us say, has spent a million dollars, or two millions or five millions, as the case may be, in forming a great park with the main object of providing a region of quiet, rural, sylvan scenery, to which people can escape for rest from the worrying distractions and the ceaseless turmoil of city life. These millions are expended so that from the incessant calls upon the attention that set the strain of modern city life at so tense a pitch, there may be at least a temporary relief in the quiet enjoyment of simple, peaceful scenery that does not clamor even to be admired. But if in going to the park and returning home again the people must fight their whole way through busy city streets full of distracting movements, sights and noises, they reach home with nerves all set on edge again and much of the value of the park is wasted. It is, therefore, to conserve the full value of its investment in the park that the city undertakes the additional expense of a parkway which shall provide a main line of approach attractive in itself and free as far as possible from features irritating to the nerves. For this purpose land is taken and paid for; for this purpose additional sums are spent in construction and planting; and swarms of tired people seeking quiet and rest pass along the route thus prepared."

"Incidentally the adjacent land is given a frontage upon the parkway and made visible to those people. The landowners then erect signs constructed and painted with the most devilish ingenuity to catch the eye at every turn, to cry out as loud as color and form and size can be made to cry, 'Here we are! You can't get away from us! Look here! Look here! Look here!' Ugly and crude in the main, though sometimes not ill designed in themselves, these signs obtrude all sorts of sordid ideas upon the mind and will not let it rest. Distraction is their aim and

motive, the very reverse of the motive which was held to justify the rest of the parkway."

We believe that every physician who practises in a city is keenly alive to the immense therapeutic possibilities of the public parkways and can testify to the jangle produced in the nerves by the insinuating advertisements which abound therein. And there, as usual elsewhere, the medical variety is most obnoxious. Wherever the tired eye ranges it is met on every side by reminders of the mortality of the flesh, and before the rest-seeker has traversed a hundred yards of park road he learns from the most reliable sources—the advertisements—that he is the victim of at least six different diseases, all equally serious and all demanding the immediate use of as many different specifics. He learns that up to this moment he has been in error with regard to the clothes he should wear, the food he should eat, the bicycle he should ride, the house he should live in. He discovers furthermore that he has never really drunk a gentleman's whiskey, never smoked a gentleman's cigar. As a consequence his mind is filled with terror of latent diseases, and torn with remorse for a life barren of gentleman's whiskey and educational breakfast oats; and he slinks back wearily to the city with his intellectual faculties so paralyzed that he cannot decide whether salvation lies in the path of pleasant purgatives or three-dollar shoes.

Seriously, it behooves physicians and boards of health to cooperate with the American Park and Out-Door Association in its laudable undertaking to free communities from this rapidly-growing nuisance, the morbidly suggestive landscape advertisement; and we sincerely hope that the day is not far distant when nerve-racked people may obtain respite from their troubles in the quiet haunts of Nature without being harried into the belief that they are in need of perpetual purgation, ethylic nerve electrifiers and educational oats.

THE RADICAL CURE OF HERNIA.

Not many years ago any operation for the radical cure of hernia was regarded with suspicion by even leading surgeons. To-day it is considered by many to be a routine surgical procedure. The improvement in results has been due, not only to the improvement in surgical asepsis, but to the perseverance of certain persistent surgeons, who have improved the technic and evolved more correct theories.

While most persons dread a surgical operation, the promise of almost certain relief from the discomforts and insecurities of the truss holds out to them a much-wished-for deliverance from that disagreeable and uncomfortable piece of harness. A radical cure rarely—truss-makers say in 2 per cent.—follows the use of a truss, but only at the expense of long-continued discomfort. The majority of practitioners still advise their patients to get trusses and the results are often excellent. When the laity, on the other hand, order trusses themselves and put them on according to printed instructions they are often unnecessary and frequently do not fit. An ill-fitting truss does not properly hold up the hernia and it increases in size until some complication necessitates a hurried operation.

In an endeavor to present to conservative practitioners the advantages of the operation for radical cure over the treatment for relief by the truss, with the possibility of operation in extremity, J. Collins Warren (*Boston Medical and Surgical Journal*, Sept. 18, 1900) has discussed 98 cases of hernia operated on between the years 1888 and 1900 and has traced the degrees of greater success that has attended each step in improvement. These cases consist of 74 inguinal, 7 femoral, 12 umbilical, and 5 ventral hernias. The improvement in aseptic technic in later years is shown by the fact that since 1895 only 16 per cent. of the cases were septic, as compared with 48 per cent. prior to that date. The term "septic," as used by Warren, includes all cases which did not heal throughout by first intention, even those cases with the slightest stitch infection.

There are marked preferences among surgeons for different kinds of sutures in this operation. In two-thirds of Warren's cases silk sutures were used, sepsis following in only 17 per cent., while in 30 cases in which catgut was the suture material sepsis followed in 40 per cent.

The after-influence of sepsis is shown by the fact that relapses occurred five times as often after sepsis as after clean wounds, and that they followed the use of catgut sutures three times as often as when silk sutures were used. In 23 cases of inguinal hernia in which silk sutures were used no relapse followed, but one-third of the cases in which catgut was used suffered relapse. It would therefore seem that, as silk is easily sterilized, is stronger and more readily manipulated than catgut, it would be advisable to use it in preference. The opinion of Bull and

Coley, that silk is not as quickly absorbed as catgut, is not sustained by Warren who claims that it is quite as easily absorbed as chromicized catgut. The operation employed by Warren in the majority of cases was that of Bassini. Macewen's operation was used in a few of the earlier cases, but proved complicated and unsatisfactory.

The age at which operative treatment is most suitable is by no means agreed upon. There is always a good chance of a cure by the truss in children, but after twenty-one years the chances fall to 2 per cent. Bull and Coley give in a general way fifty years as the age limit for operative treatment for hernia, but Warren's hospital experience does not bear out this view. In a large number of cases operated on he found that nearly 20 per cent. were over fifty years of age and also that there were no recurrences reported among this number.

A hernia is generally conceded to be cured if there is no recurrence within a year after the operation. Warren was able to follow up 58 cases for a year or longer after the operation. Forty-five of these were inguinal hernias and a relapse was reported in 7 of them, giving 84 per cent. of cures. There was no recurrence in 3 cases of femoral hernia, or in 2 cases of ventral hernia, but in 8 cases of umbilical hernia there were three recurrences. A comparison of the number of cures obtained by operation on inguinal hernias prior to 1895 with the number obtained during the last five years shows a wonderful gain, due undoubtedly to improved technic.

As the operative treatment for the radical cure of hernia involves no mortality and is successful in 90 per cent. of the cases, it is to be hoped that practitioners in general will learn to appreciate it and employ it in all suitable cases. In childhood and youth, if the patient's parents are intelligent, the truss still has its place, but after the age of twenty operation should always be advised.

SALINE INFUSIONS IN PNEUMONIA.

The outlook in the treatment of pneumonia has not undergone much modification for a number of years. Statistical analysis when applied to the reports of different methods has shown that the kind of treatment has not materially altered the mortality. Indeed, it can be said that careful nursing without drugs gives as good results as any other plan of treatment.

It has come to be recognized, in a broad general way, that pneumonia patients may be grouped into three classes, *viz.:* (1) Infants, healthy young people and robust adults; (2) double pneumonia in old age, alcoholism, complicating constitutional disease, and (3) severe pneumonia in unhealthy or debilitated patients, usually over thirty. In the first group there is a marked tendency of the disease to run its course without fatal result if proper nursing is maintained; the second class of patients almost always die; but in the third group there are a number which give occasion for the most persistent and anxious watching, and it is in such patients that treatment methods, if of value, can demonstrate their usefulness.

Within recent times two procedures which demand attention have been advocated, the antipneumonic serum and the treatment by subcutaneous saline infusions. With reference to the former, we are not yet in a position to maintain that a specific has been found. Many different sera have been tried, but as yet our knowledge is too fragmentary to warrant conclusions. The method offers, however, much for future development.

The second method is not as new as many of its recent advocates would claim. Its action is based on the assumption of a bacterial toxemia and is simply a logical extension of the method by bleeding, and perhaps offers its best results in the combination of the two methods. Penrose of Baltimore in 1899 advocated the method quite strongly, and Wells before the American Medical Association in 1899 went so far as to say that by the combined method of venesection and venous saline infusions pneumonia could be made a curable disease. Recently (*British Medical Journal*, Sept. 29, 1900) W. Ewart and Beaumont Percival of London have tried simple saline infusion in a number of patients who seemed to offer but the faintest chances of recovery. The results were not very satisfactory, only one case in six recovering, but the general impression gained was that the method was of value and that it was not followed by unfavorable complications and delayed rather than aggravated the fatal results. "The instalment of relief which was observed in some of the cases reported suggests that in patients with anxious prognosis, but not actually of the worst type, this mode of treatment might be capable of making a favorable and perhaps a life-saving impression upon the attack."

ECHOES AND NEWS.

NEW YORK.

Dr. S. Purple.—The President and Fellows of the New York Academy of Medicine hereby express their high estimate of the character of the late Dr. Purple, as a citizen and a physician; their earnest appreciation of his valuable services as a Fellow and an officer of the Academy, and their grateful acknowledgment for rare books and pamphlets presented by him in large numbers to the Library of which he was the founder. They earnestly desire to extend to the members of his bereaved family their profoundest sympathy in this, the hour of their sad affliction.

Wm. H. Thomson, M.D., President.
Louis F. Bishop, M.D., Secretary.

Tuberculosis Hospital Site.—From the daily press we learn that the efforts of the residents of Clinton County to secure the location at Dannemora of the proposed hospital for the treatment of incipient tuberculosis, and their opposition to the site at Lake Clear selected by the Board of Trustees appointed by Gov. Roosevelt, have aroused the residents of this section of Essex County to vigorous protest. A committee of citizens has adopted resolutions which are to be forwarded to the State Board of Health and the Forest Preserve Board, by whom the selection of the site is to be made. The resolutions are as follows:

Whereas, Desperate attempts are being made by certain politicians to prove that the Board of Trustees appointed by Gov. Roosevelt to select a site for a hospital for consumptive patients has erred in its judgment in a selection of Lake Clear,

Resolved, That we endorse this selection and commend the good judgment of the Trustees.

Resolved, That we condemn as unbecoming good citizens the motives underlying the efforts of the opponents of this selection.

Resolved, That Dannemora should be used for the same purpose for which the State originally selected it—namely, for people who are to be confined and punished, and not for people who are seeking outdoor life and recuperation.

Resolved, That convict labor on buildings to be inhabited by the criminal class and inside the prison walls is proper, but that such convict labor should not be put in competition with the honest laboring man in the outside world.

Resolved, That the surroundings in this penal colony are incompatible with cheerfulness, but, on the other hand, would have a tendency to produce melancholia, a condition most to be avoided in tubercular patients.

Resolved, That a copy of these resolutions be forwarded to the State Board of Health and the Forest Preserve Board.

PHILADELPHIA.

Women's Homeopathic Hospital.—Dr. Mary Davis Ridgeway, for three years a member of the staff, has resigned in order to take a special course in surgery at Cornell University.

Hygienic Church.—The People's Church at Reading has begun the use of individual cups for communion service. The pastor is a pioneer in this line, having formerly introduced the custom in Baltimore.

Municipal Hospital.—The Board of Health has received a petition from the Women's Sanitary League asking that appropriate wards be fitted for the treatment of pay cases of scarlet fever and diphtheria. It is asked that the charges be made not more than $25 per week.

Evans Estate.—It is announced that the heirs and legatees have at last reached an agreement by which the estate will be settled in Philadelphia. As soon as the estate is turned into money the great dental institute will be begun.

State Hospital for Insane at Norristown.—The cost of maintaining the 2100 inmates during the past year was $3.29 each per week. The trustees have asked for one building for male consumptives, two for nurses and attendants, a pathological laboratory and a morgue.

Conservative Surgery.—Dr. B. F. Baer reports a unique case. The patient was a woman in whom tubal gestation was present. Abdominal section revealed a cystic condition of the opposite ovary which necessitated its removal. In order to save the pregnant tube the fimbriated extremity was dilated and by careful massage the contents of the tube were expressed. This maneuver was entirely successful and the patient made a good revovery.

Selling Literature Intended for the Sick.—An enterprising individual is turning a few pennies by soliciting magazines from people, under the representation of collecting them for hospital patients, and then disposing of them to dealers in second-hand books. This trick was exposed some two years ago. The perpetrator ceased his actions for a time, but has again begun his work.

St. Joseph's Hospital.—This hospital, which was formerly in some disrepute, is now making rapid progress. Abdominal operations were regarded as likely to be unsuccessful and ran down as low as two in one year. Last year there were more than 100 performed. A new departure has been made by allowing physicians to bring patients to the hospital and still retain full charge of the treatment. This is the only hospital in Philadelphia that affords such facilities.

Filthy Streets and Diphtheria.—An inspection of the streets in the sections of the city where diphtheria is most prevalent has shown some of them to be horribly filthy in spite of the efforts of the Board of Health to guard against such insanitary conditions. The paved streets are kept in good condition, but the unpaved streets and alleys are not. The Superintendent of Street Cleaning states that the latter do not come under his jurisdiction. The cases of diphtheria during the last week number 120. The total mortality of the city still continues unusually low.

Hospital Charity.—This question was under discussion at a recent meeting of the Medico-Legal Society. Efforts are to be made to secure legislation to district the city and place an overseer in charge of each district. Applicants for charity must then first apply to the overseer. This it is believed will lessen the abuse of promiscuous giving of charity by the various hospitals.

Mother's Congress.—The following resolutions were adopted at the recent meeting in Lancaster: (1) That we especially urge the women of our own State to work for the establishment of juvenile courts, for the complete separation of blameless from misdemeaning children, and for the care of all dependent children, as far as possible, in individual homes rather than in institutions. (2) Whereas, in Pennsylvania the women criminals are confined in jails and prisons, be it resolved that we urge the State Legislature to make an appropriation to establish a reformatory for women criminals similar to the one in Sherburne, Mass.

Bacillus Aerogenes Capsulatus.—An interesting case of known infection by this bacillus was recently treated at the Polyclinic Hospital by Dr. John B. Roberts. The patient was a girl who had sustained a compound fracture of the forearm, the skin opening being very small. In three days the forearm was gangrenous and multiple incisions were made with the hope of saving the arm. This was futile and the following day amputation at the middle of the arm was necessary. The flaps soon showed beginning gangrene, but this was finally checked and recovery followed. Examination at the Pepper Laboratory showed the presence of the bacillus aerogenes capsulatus which had invaded the blood-vessels as well as the tissues.

County Medical Society.—At the meeting of October 24th, Dr. A. H. Dare demonstrated a new hemoglobinometer. The instrument is adapted to the use of undiluted blood and has the following points in its favor: (1) The stratum of blood is always constant. (2) The possible error due to coloring introduced by diluting fluid is done away with. (3) The reading is made through a camera tube with achromatic lenses which magnify the color field about three times. A comparison with Oliver's method in a series of 500 cases shows an almost exact correspondence in the readings. Since blood-work is becoming of such importance the cost of this instrument, $15, makes it accessible to the general practitioner.

Dr. Henry W. Stelwagon gave a report of his visit to the Finsen Institute in Copenhagen where skin diseases are treated by concentrated light rays. Dr. Stelwagon will soon have a sun apparatus in operation at the Howard Hospital and later expects to have an electric appliance for the same purpose. The results will be awaited with interest.

Dr. Norman B. Gwyn of Batimore read a paper on the occurrence of typhoid bacilli in the urine and the means of disinfection. Recently experiments have been made with various disinfectants. Milk of lime scarcely deserves this name. The three most useful are bichloride of mercury, chlorinated lime, and liquid chlorides. Chlorinated lime is one of the most reliable, 30 cc. completely and almost immediately disinfecting 1200 cc. of urine. Two-tenths the volume of infected urine of one-to-one-thousand bichloride solution will thoroughly disinfect it in five minutes.

CHICAGO.

Medical Inspection of Public Schools.—At a meeting of the Physicians' Club, held October 29th, the following resolution was presented and adopted: Resolved, that it is the judgment of the Physicians' Club of Chicago that the results obtained by the medical inspection of the schools of Chicago demonstrate the high sanitary value of the system. As a life-saving measure it is of the greatest importance to the City of Chicago.

Visiting-Nurse Association of Chicago.—This Association was recently incorporated and a charter was applied for and granted. The object of the Association is to furnish trained nurses to those otherwise unable to secure skilled attendance in time of illness, to teach cleanliness and the proper care of the sick. At the end of the first year of the Association's work there were four nurses in its employ and 771 cases had been cared for. At this, the eleventh year of the Association's life, there are fourteen nurses and more than 500 cases a month are cared for. A corps of twenty untrained or emergency nurses, who work under the supervision of the doctor and visiting-nurse, has proved of untold value to hundreds of cases where the daily visit of the visiting-nurse is not sufficient for the proper care of the case.

Gift of Dr. Senn.—Dr. Nicholas Senn recently gave to Rush Medical College $50,000 which insures the beginning of a building project which will give the College the finest and best equipped structure for clinical work in the West. Architecturally the structure will follow the Italian Renaissance, the first few stories being of stone, and the four upper stories of terra-cotta and brick. The recitation room and the dispensaries will occupy the first, second and third stories. They will be equipped with all the latest improved medical and surgical appliances. On the fourth floor will be the laboratories. Their equipment will be the finest and most modern. The fourth floor will be connected with the Presbyterian Hospital Building by a covered bridge. Two amphitheaters for clinical work, capable of seating 150 students, will occupy the fifth floor.

Testing the Eyesight of School Children.—The fact that dulness of eye is closely related to dulness of mind has been conclusively shown by Professor Smedley, Supervisor of the Board of Education's Department of Child-Study. Among the deductions made by Professor Smedley from the

mass of statistics, as the result of examinations, are these: (1) Dull pupils have a greater number of eye defects than brighter pupils. (2) Defective eyesight causes dulness in the child. (3) The primary rooms in the public schools have the poorest light. (4) Boys have better sight than girls. (5) School-life is responsible for many eye defects. (6) The first three years of school-life increase eye defects one-third. (7) Of pupils whose sight is but one-tenth the keenness of normal, the number grows steadily larger from the beginning to the end of the school-life. (8) While in ordinary schools 32 per cent. had only two-thirds of ordinary keenness of sight, in one school 48 per cent. had that degree of eye defects. (9) Such defects undoubtedly were the cause of the presence of many of the pupils in that school. (10) Something must be done at once, at almost any cost, to save school children's eyes.

GENERAL.

Portrait of Dr. La Costa.—In response to the many requests for the portrait of the late Dr. J. M. Da Costa which appeared in the Medical News of September 15th, there have been prepared impressions, specially printed on heavy paper measuring eleven by fourteen inches, suitable for framing. These may be had at twenty-five cents each, by addressing a request to the Medical News.

Obituary.—Dr. Louis W. Read died at his home in Norristown, Pa., last week, aged seventy-two years. He was born in Montgomery County, Pa., in 1828 and graduated from the medical department of the University of Pennsylvania in 1849. When the Crimean War began he offered his services to the Russian Government, was accepted and served throughout the war, effecting important improvements in the treatment of gunshot wounds which were afterwards adopted in the United States and Europe. In 1861 he was appointed surgeon of the First Pennsylvania Reserves and later was made surgeon of United States Volunteers. In 1864 he took charge of the McKean Hospital in Baltimore where he served two years. He was surgeon-general of Pennsylvania and at the battle of Gettysburg removed a bullet from the body of Gen. Hancock after several other surgeons had failed.

War Against Osteopathy.—Swan L. Thompson, an osteopath, has just been fined $50 in the police court of Milwaukee, Wis., and ordered to pay the costs of his prosecutors, the Wisconsin State Board of Medical Examiners, for illegally using the title "doctor." The penalty is the same as that imposed in the cases of the Christian Scientists, who were convicted on the same charge. Mr. Thompson was accused in addition of illegally practising medicine without having a license, but this charge was abandoned by the prosecution under the spirited defense made to it. When the conviction was announced notice of appeal was at once filed and the osteopaths of the State, who are behind Mr. Thompson, say that it will be pressed. They assert that they have as much right to affix to their names the letters D. O., as Mr. Thompson did, as other persons have to use D. D. or LL. D., because they have studied at a college of osteopathy and are thoroughly versed in that system of treating disease. In the course of the prolonged hearing of the case several osteopaths went on the stand and explained the course of treatment they believe in. One of them on demand demonstrated with a skeleton that he had a scientific knowledge of the human body. The State Medical Board complained that pamphlets were illegally sent out by Mr. Thompson explaining osteopathy as a system of healing without drugs by using the bones as levers and so exciting the nerves as to cause the muscles to contract and produce a venous flow of blood to the heart. Osteopathists believe that disease is the effect of a local or general disturbance of blood and that a natural flow of blood is health. Counsel for Mr. Thompson contended that if osteopathic treatment was against the law it was illegal for trained nurses and Turkish bath attendants to treat sick persons. The osteopathists hope to secure a law which will put an osteopath on the State Board of Examiners and regulate their schools like other medical schools.

Training School for Nurses.—The United States Civil Service Commission announces that on November 20-21, 1900, an examination will be held in any city in the United States where it has a local board of examiners for the position of superintendent and trained nurse, Training School for Nurses, Freedmen's Hospital. The examination will consist of the subjects mentioned below which will be graded as follows:

1.	Essay (not less than 300 words)	12.5
2.	Anatomy and physiology	12.5
3.	Hygiene of hospital wards and sick-room	10.
4.	Routine requirements of hospital ward and sick-room	10.
5.	General nursing	10.
6.	Surgical nursing	12.5
7.	Obstetrical and gynecological nursing.	12.5
8.	Experience	20.
	Total	100

Applicants must be graduates of reputable training schools for nurses, and must have had at least three years' experience in hospital nursing. Age limit twenty years or over, but the Department desires that preference in certification be given to unmarried females between twenty-five and fifty years of age. From the eligibles resulting from this examination it is expected that certification will be made to the position of superintendent and head nurse, Training School for Nurses, Freedmen's Hospital, Washington, D. C., at a salary of $900 per annum, and to other similar vacancies as they shall occur. This examination is open to all citizens of the United States who comply with the requirements and

desire to enter the service. All such persons are invited to apply, and applicants will be examined, graded, and certified with entire impartiality and wholly without regard to any consideration save their ability as shown by the grade attained in the examination. Persons who desire to compete should at once apply to the United States Civil Service Commission, Washington, D. C., for application forms 304 and 375, which should be properly executed and promptly filed with the Commission.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, October 24, 1900.

CASE OF PLAGUE AT CARDIFF—THE GLASGOW PLAGUE OUTBREAK—REPORT OF PROF. ZABOLOTNY OF ST. PETERSBURG—PRECAUTIONS IN LONDON—THE RISK OF INFECTION FROM THE BOOKS OF PUBLIC LIBRARIES—OPENING OF NEW SCIENCE LABORATORIES AT KING'S COLLEGE—DISASTROUS EFFECTS OF THE WAR ON HOSPITAL FUNDS.

A FATAL case of plague has occurred at Cardiff on October 4th. The ship "Southgarth" arrived in the Tyne from the River Plate. One of the crew landed at South Shields, where he was taken ill on September 21st. He went to his home at Llandaff, where he arrived on the 27th. He was supposed at first to be suffering from typhoid fever, but plague was afterward suspected. Bacteriological examination of the blood and cultures from the bubo showed the presence of the bacillus pestis. He was removed to the Cardiff Fever Hospital in a dying condition. A nurse volunteered to take the case, and within twenty minutes of the man's arrival, he and the nurse and an attendant were completely isolated. He died on October 4th. The necropsy and inoculation of a guinea-pig confirmed the diagnosis. By consent of the widow his body was cremated. During a fortnight five ships have arrived at Cardiff from ports at which plague has been reported. Seven hundred rats have been destroyed, no less than 134 having been found on one ship. Their bodies were burned. The Local Government Board sent one of their inspectors, Dr. Buchanan, to Cardiff to investigate the arrangements made to check the spread of plague, and he has satisfactorily reported on them.

The outbreak of plague in Glasgow appears to have been completely checked. There are now 20 cases in hospital and it is twenty-six days since the last case was discovered. One more death has occurred. A most interesting report on the outbreak has been published by Prof. Zabolotny, of the Imperial Institute of Experimental Medicine of St. Petersburg, who has spent several weeks in Glasgow on behalf of his Government. In recent years he has been a member of the Russian Expedition for the study of plague in India, Arabia, China, and Eastern Mongolia. Before leaving Glasgow he drew up the following conclusions which he conveyed to the Medical Officer of Health: (1) The epidemic when compared with that of India, China, and Africa, and with those of Europe in recent years (Oporto, Kolobowka), is of the mildest description. (2) The extension is not great and the mortality is insignificant, which may be attributed to the energetic sanitary measures. (3) For the most part the cases are bubonic, which are epidemiologically less dangerous than the pneumonic cases. These latter are excessively contagious, because the sputum teems with plague bacilli. (4) As in the bubonic form contagion takes place only by contact with the skin, isolation and cleansing of linen play a most important *rôle* in prevention. (5) For persons in contact with the sick the best method of protection is the injection of 10 to 20 cc. of serum, as here practised. Treatment of patients is most effective with large intravenous injections (60 to 120 cc.). (7) The necropsies of fatal cases show a picture of protracted illness (suppuration nodules, mixed infection), and not that of an acute malady terminating fatally in from two to three days.

Should an outbreak of plague take place in London it is proposed to admit patients to the fever hospitals of the Metropolitan Asylums Board. But the *British Medical Journal* doubts very much whether these hospitals could supply the accommodation, for cases of scarlatina and diphtheria are constantly refused admission owing to lack of accommodation. The *Journal* thinks that temporary wooden hospitals, which could be destroyed by burning, should be constructed. Again, how about nurses? No doubt many heroic women could be found; but the question of infection is a serious one. Out of a staff of six nurses in Hong-Kong two contracted the disease and died. As a precautionary measure it is thought that nurses should be asked to volunteer at once to be injected with Haffkine's prophylactic serum. It will not do to wait until they are called upon to nurse plague patients.

A paper by Mr. MacAlister, Librarian of the Royal Medico-Chirurgical, and Dr. W. G. Savage, Bacteriologist to the Cardiff Public Health Laboratory, dealing with an "Investigation into the Amount of Risk of Contracting Infectious Diseases by the Use of Public Library Books," read at the annual meeting of the Library Association at Bristol, is of great practical importance. From time to time the public are frightened by the suggestion that during epidemics the books of public libraries are a grave source of infection. But the authorities generally believe that if reasonable precautions are taken by notification and withdrawal of infected books there is practically no danger. The authors of this paper hold that there is no ground for drastic measures, and that there would be more justification for stopping all

public conveyances and prohibiting all social gatherings during an epidemic than for closing the public library. For the purposes of investigation soiled library books and new books were used for weeks by patients suffering from diphtheria, typhoid fever, and tuberculosis, and then subjected to bacteriological examination. The result was that it appeared impossible for infection to be conveyed by means of books. But there was one exception: By wetting the thumb and turning over the leaves of an infected book it was found possible to convey germs to the mouth.

New science laboratories will be formally opened at King's College, London, on October 30th, by Lord Lister. The Lord Mayor and sheriffs will take part in the ceremony, and a great number of invitations have been issued to representatives of learned societies, medical schools, etc. The structural alterations required and the new equipments have cost $100,000, which has been in part generously subscribed by the public in spite of the demands for the various war funds. The College will now have laboratories for physiology, bacteriology, biology, botany and geology which can compete with the best continental ones. The bacteriological department, which has been the most complete attached to any medical school in England, has been greatly enlarged. There will be a technical laboratory, a new class-room, a research-room, and a bacteriological library.

The Boer war has had widespread commercial effects. It has affected the prices of everything from a cup of coffee to a scrubbing-brush, and from a pair of boots to a football. A very serious consequence is the influence on hospital finances, which in one or two cases has been almost disastrous. The following decreases in the revenues have occurred: St. Thomas's, £7500; King's College, £2900; Orthopædic, £1000; Cancer, £4928; Great Northern, £2076. In the case of a few small institutions insignificant increases (from other causes) have occurred. From 39 out of 87 different medical institutions to which a note of inquiry was addressed a reply has been received. These 39 report a total loss of £20,000. The extraordinary amount subscribed by the public to various war funds has diverted the stream of charity.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

NORMAL AND PATHOLOGICAL BILE SECRETION—UNUSUAL SEQUELAE OF GONORRHEA—CEREBRAL INFLAMMATION—APPENDICITIS LARVATA—NEW APPARATUS FOR BLOOD TRANSFUSION—POST-OPERATIVE ILEUS—RUPTURE OF THE UTERUS—DURATION OF GESTATION—MARTIN'S TREATMENT OF THE UMBILICAL CORD.

Brauer (Heidelberg) at the Seventy-second Assembly of the Deutscher Naturf. u. Aerzte in Aachen, September 16 to 22, 1900, rehearsed his conclusions upon the normal and pathological composition of freshly-secreted bile in order to establish some relation between it and disease. Hitherto such work has been confined to the autopsy-table and on this account is certainly too untrustworthy to be of scientific interest. Of more recent years advance in diagnosis and in surgical technic has led to more and more frequent operation for gall-bladder disease with the common establishment of fistulæ from which most of his human specimens have been gathered. The other and wider source of bile were animals in which fistulæ, various diseases and drug intoxications were produced. The chief point investigated was the influence of bile acids on the total production of bile. His results indicate that after a definitely long persistence of a fistula the total output of the bile and of the biliary acids sinks to a definite level. The loss in the acids of the bile must be renewed through the food if the secretion is to remain at its normal state, because the liver needs a definite quantity in order to produce bile in sufficiency and health. Again the nutritive influence of the bile upon the other glands of the body is very similar to it upon the liver itself, and this seems to account for the failure of gland function and of general nutrition seen in animals with fistula. Hence is the importance of determining the actual quantity of bile as an index of the real liver activity. The next field surveyed is that of pathological bile. In health not even traces of sugar were found, even when four per cent. of it appeared in the urine of alimentary glycosuria none could be detected in the gall. But on the other hand one dog having pancreas diabetes developed in three or four days 5 6/10 per cent. glycosuria and 1 2/10 per cent. sugar in the bile and a second dog showed 3 6/10 per cent. and 8/10 of 1 per cent. respectively in each. Whether in this disease hyperglykemia is produced or whether through changes in blood-pressure or through the too rapid conversion of the glycogen sets up glycocholia has still to be decided. Interesting results followed deep intoxication with ethyl and amyl alcohol. Distinct albuminocholia was found disappearing in about three days, more pronounced in degree with amyl alcohol. Epithelial casts were present, many of them dichotomously arranged. With exhibition of potassium iodide cylindroids, much longer, contorted spirally, appeared. Further many cells very like hepatic parenchyma cells were found. These circumstances support the theory of Aufrecht that in cirrhosis of alcoholic origin the parenchyma is first affected.

Eulenburg (Berlin) said the gonococcus is known to be the cause of remote sequelæ. Arthritis, endocarditis, pelveo-peritonitis, neuroses, neurasthenia, chorea, sterility and impotence are the diverse possibilities of this germ. He has observed lately distinctly localized nerve lesions and has differentiated neuralgia, neuritis with paralysis and muscle atrophy and paralysis and myelitis, including fourteen instances of neural-

gia, four of muscle atrophy with paresis and one of myelitis. Neuralgia attacked the nervus ischiadicus, tibialis, radialis and ulnaris. In the first named, associated nerves like the femoral, obturator and genitocrural were often involved. All the patients were young and all the neuralgia began between the second and seventh months after the original infection. Muscular atrophy appeared in the neighborhood of joints affected by the disease, and were it not for the ascertained cause would have made one think of juvenile atrophy. One case of myelitis with endocarditis and arthritis resembled tabes dorsalis in its other symptoms, absence of patellar reflexes and great pains in the lower extremities. Cure followed three years of treatment. The diagnosis rests upon the presence of the germ; in absence of that, upon a careful history of an attack and the results of a thorough physical examination. Iodipin is of therapeutic value in the treatment.

R. Lenzmann (Duisburg) reported a few additional cases of what Ewald has termed *appendicitis larvata,* characterized by variable attacks of dull pain about the gastric and umbilical regions, nausea, vomiting, diarrhea, little or no pain or tenderness about the region of the disease, but a readily and distinctly palpable appendix. The diagnosis was cleared in each case by the operation and the lesions were in each infiltration of the whole parieties, ulcers of the mucosa and adhesions. The explanation of the referred pains seems to be the anastomosis of the inferior mesenteric plexus with the solar plexus by means of the gastric nerve.

M. Dinkler (Aachen) in the light of four recent cases in his practice described the effects of inflammation in the cerebrum among children. He exhibited a case of right posthemiplegic athetosis with a history of diphtheria, then encephalitis with hemiplegia and finally athetosis. Tendon transplantation was the suggested treatment. The brain of a hemiplegic child was shown in which the cause of disease appeared to be a very large posthemorrhagic cyst.

Weintraud (Wiesbaden) exhibited the apparatus for blood transfusion, having simplicity, practicability, painlessness and asepsis in its favor. When the veins of the upper arm are subjected to elastic ligature the pressure rises to 75 to 85 mm. of mercury and equals about 1 m. of water-pressure. This fact is taken advantage of in the simple device which consists of two small cannulæ inserted each into the vein of the patient and the blood-giver. With the latter the sterile rubber tube, with connections at the ends, is attached and, after blood flows freely from it, is connected with the patient's cannula. In from 5 to 10 minutes, through fine tubes, 150 to 250 c.c. of blood will pass. If salt solution also is desired a T-tube with a vertical arm, a meter long, dipping into the solution, may be inserted in the course of the rubber tube.

Winternitz (Tübingen) considers embolism of the lungs and ileus two unfavorable factors in any operation which are entirely beyond the surgeon's responsibility. Ileus may be septic, after a septic peritonitis, mechanical without sepsis after occlusion by adhesious kinks or twists, paralytic by nervous action or by inexplicable cause as occurs often after total extirpation of the uterus. He reported eleven cases of post-operative ileus, 5 after total vaginal hysterectomy, 3 being septic, 7 mechanic without sepsis, and 1 paralytic, observed among 459 laparotomies, 280 vaginal hysterectomies and 98 colpoceliotomies, a total of 837 cases. The septic cases were not saved by a second operation, but 6 of the mechanical cases were. He holds that by careful observation of the symptoms and physical signs from the first day of the operation it is possible to differentiate the septic from the purely mechanical varieties. Peritonitis presents early invasion, commonly fever, uniform meteorism, universal tenderness. Mechanical ileus has delayed invasion, rarely fever, always elevation of pulse, commonly localized meteorism and tenderness, visible and palpable movements of the gut at some point which are accompanied by acute pain and increased tenderness. Under these signs a second operation should always be done. As to the time when such should be undertaken he laid down the following rules. If no flatus is passed and the earliest symptoms of ileus appear, consisting of singultus, vomiting, especially of green fecal matter, massage and lavage are resorted to. If these symptoms continue and in addition meteorism, fall of temperature and rise of pulse-rate ensue, a secondary operation should at once be done on the diagnosis of mechanical ileus. The further salient points of the subject were enumerated as follows: First, in purely mechanical ileus due to vaginal operation treatment must be undertaken through the original route, later in the face of failure, laparotomy must be done. Second, original laparotomy wounds must be opened, adhesions freed and then the obstructed gut emptied entirely of its contents by incisions at various points through which it is stripped clean. These openings must be carefully sewn and the toilette of the peritoneum rigid. Gloves are in these cases recommended. Third, these procedures are useful also in paralytic ileus and should be followed in promising cases. In true septic cases the frequency of failure almost contraindicates interference.

Franz (Halle) reviewed twelve examples of uterine rupture, ten of them complete. The signs of the approach of this calamity are not always definite. In only one of his four patients were there indications of undue tension and stretching. Even the actual presence of a rupture may have very few manifestations The causes of death are bleeding and infection. So frequently are they infected that it would be well to treat all on that basis and to resort to the radical operation. The vaginal route for extirpation is the best. If radical ablation is refused, then a purely expectant plan should be first tried.

Von Winckel (Munich) presented a tabulated report on the duration of gestation. He as-

sumed the premise that the weight of the child bears direct relation to the length of the pregnancy. His observations include only children weighing four kilos or more. In 1007 instances he elicited as accurately as possible from the parents the date of the last menstruation and the most likely date of the conception. The lowest level appeared as 280 days after the first well day following the last menstruation or 275 days after the probable conception, the highest level included 321 and 336 days. He now subdivided his series into groups according to 10 days, namely, 280 to 290 days, 290 to 300 days, and so on. In this manner he discovered 31 examples of very long gestation, one well over 310 days. From these facts he asserts that in legitimizing offspring a pregnancy of 310 days should be acknowledged by law.

Wirtz (Köln) presented the results of 150 cases of treatment of the navel in the newly-born by the method of Martin, namely, ligation with silk close to the navel and burning down to it with the actual cautery. This procedure has the advantages of securing more rapid falling-off of the stump, more prompt and smoother healing of the core, simplicity of management, and decreased danger of infection. Putrescence of the navel-wound, through absorption in the excoriations caused by the silk against the tender skin of foul bath-water, was not observed. Hematomata following cutting in of the silk has also not occurred. As the scab-tissue in the core from the burn possesses certain affinity for moisture, he suggests a wet dressing of alcohol which will both sterilize, dry and harden.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held October 2, 1900.

J. Arthur Booth, M.D., Chairman *pro tem.*

Periodical Psychoses.—Dr. A. B. Defendorf read this paper. He said that years ago all forms of insanity were looked upon as more or less periodical, but gradually this list has been reduced to periodical mania and periodical melancholia. The English and American observers have been slow to recognize periodical insanity. The record of hospitals for the insane show it to constitute a not inconsiderable percentage of cases admitted, coming second to dementia precox. These cases are characterized by intense psychomotor restlessness, exhibiting no signs of fatigue after weeks or months of excessive motion, and by unclouded consciousness, except in the extreme maniacal condition called delirious mania. These patients are rich in words if not in ideas. Delusions, when present, are transitory and are usually of the expansive type. The patients are happy and contented, yet they change very suddenly from happiness to melancholia or *vice versa*. In the depressive form, the associations of ideas show retardation, and the emotional attitude is uniformly one of depression or despair. More or less stable delusions are present. Cases are found showing both the maniacal and depressive elements, but usually one or the other predominates. The most prominent etiological factor is defective heredity, found in from 70 to 80 per cent. Other causes are shock, acute diseases and mental strain. When the first attack occurs after childbirth it is apt to recur with each succeeding confinement and continue after the climacteric. The first attack is apt to be of the depressive form. More than half of the cases occur before the age of twenty-five. As the attacks are repeated, the lucid intervals, during which the mental faculties are fully retained, tend to shorten. The prognosis of the psychoses is bad. During the height of the disease, or in the extremely maniacal or depressive forms, death may occur from exhaustion, or may be self-inflicted. The author's conclusions were: (1) Periodical insanity is characterized by a definite symptomatology, which permits of differentiation in the first attack; it is a prominent psychosis.

Dr. B. Sachs said that although all recognized the existence of such a thing as periodical insanity, danger lurks in the term because almost all forms of mental phenomena are apt to exhibit a tendency to recurrence. For this reason a regular recurrence of, for instance, mania and depression, with perhaps a lucid interval, should be insisted upon. It was rather curious that those describing periodical insanity insist that there must be marked depression. He could recall a case of distinct hypochondriasis followed by a lucid interval of seven years and then an attack of pronounced melancholia. There was again a lucid interval followed by an attack of mania. Attention was called to the remarkable suddenness with which the patient passes from one state to another. He had had under observation a girl who had been in a state of depression for over eight months, and then very suddenly had had a lucid interval lasting one year. This had in turn been followed by acute mania.

Dr. W. D. Granger said that a few cases of undoubted circular insanity were so decided in their symptoms that they could not be mistaken for anything else. This was particularly true if the person was seen late in life, and had a history of recurrent attacks extending over many years. There were, however, many cases less pronounced in type, rendering it difficult to classify them. He had personally seen only a few cases of circular insanity. He had never seen the sudden changes referred to by the last speaker, nor had he ever seen a case of true incoherence in connection with circular insanity. He had seen several cases of recurrent insanity in which there were from two to five attacks of rather mild melancholia. He had had under his care a young woman suffering from this form of insanity, and also her mother, brother and sister. The sister had a most violent mania, proved at

autopsy to have been a complication of typhoid fever. She had also periodical attacks of active though not violent mania. Another form of the circular type that he had noticed and had never seen described in the text-books was the form of chronic mania developing, in the last few years of life, recurrent attacks of mania and melancholia.

Dr. William H. Thomson said that he had had under his continuous observation for ten years a case of periodical insanity—probably the only one to which he would be willing to apply the term. The attacks had recurred regularly every other day all these years. The patient was a man, forty-eight years of age when the disease had first set in. There was no hereditary psychosis. At the beginning he had been attacked with melancholia and had attempted suicide. Attention had been early directed to the fact that his condition was worse every other day, and for this reason he had had most thorough and persistent antimalarial treatment. When first seen by the speaker, his memory had been good, and he had been in no way irrational. The temperature had been normal. The next day his temperature had risen to 101° F. and he had become delirious. On the following day his condition was that noted at the first visit. The febrile symptoms ceased after about three months, but in other respects the case had kept up this alternation ever since that time. Examination of his secretions had thrown no light whatever on the etiology of his singular mental disturbance. The type was that of melancholia with excitement. He had never been truly maniacal. Regarding periodical psychoses in general, Dr. Thomson said he could not agree with the reader of the paper that they constituted such a definite class, for, if so, they should be definitely periodical. Another case was then cited in which the attacks had begun with talkativeness and an appearance of well-being, which commonly lasted for about six weeks, and were then followed by extreme mental depression. At no time was there any confusion of personality or any delusions. The attacks of mental paresis lasted two or three months, and usually came on every winter. Such a case seemed to him a true example of periodical psychosis, but many of those described in the paper seemed to him to come rather under the head of relapsing than periodical insanity.

Dr. William M. Leszynsky said that no one could tell at the first attack whether there would be recurrence or not. With a good previous history it was an entirely different matter.

Dr. L. Pierce Clark said that while in a hospital for insane he had seen a case of intermittent mental stupor which recurred at short and fairly regular intervals, thus resembling in some respects the case reported by Dr. Thomson. Such cases were very rare, only six being on record. Sudden transitions were quite characteristic in the mental disorder first described by Charcot in connection with mental epilepsy.

Dr. Defendorf said that the periodicity, and that an irregular periodicity, is the characteristic of the whole course of the disease throughout the life of the individual. But there are certain fundamental symptoms, such as the condition of the memory, the tendency toward deterioration, and the character of the delusions and hallucinations upon which the diagnosis should be founded. Relative to the sudden transitions from one state to another, he said that this occasionally happens over night.

Status Epilepticus: Its Nature and Pathology.—Drs. L. P. Clark and T. P. Prout presented this paper, Dr. Clark reading the clinical portion. About forty-five cases formed the basis of the paper. Unfortunately only five cases could be studied histo-pathologically. The modern notion of status is that it is the acme or true climax of the disease, and not, as formerly supposed, a chance termination of epilepsy that by proper treatment could have been avoided. It is a state of epilepsy in which one seizure follows another so closely that the previous psychical exhaustion is not recovered from. One case at the Craig Colony for Epileptics had 384 typical psychic seizures in one day. It occurs with about equal frequency in all the different forms of epilepsy except that dependent upon organic brain disease. The latter constitute one-half of all the cases of status. Exhaustion paralysis is very characteristic of status. No foundation had been found for the statements of some writers that either age or sex exerts any influence. According to their experience, the shortest intervals had been in those developing their epilepsy between the age of ten and sixteen years. On an average, eleven years elapse between the beginning of the epilepsy and the occurrence of status. Menstruation in women does not seem to be productive of status. In the great majority of cases the approach of status is denoted by a steady increase in the frequency of the epileptic seizures. They had seen 300 attacks a day in several cases, and still recovery had occurred. One case had had status epilepticus for twelve days, and had recovered, having had during this time 1800 seizures. The temperature elevation in status usually begins after the first severe convulsion, and there is usually a direct ratio between the number and severity of the convulsions and the elevation of temperature. The record of the pulse, temperature and respiration frequency gives the best indication of the severity of the status. Generally the maximum of the fever marks the maximum of the seizures, and if the fever persists after this one should be led to suspect some complication. Occasionally the fever subsides by crisis. Occasionally also the temperature rises to 107° or 108° F. As to the cause of the fever curve, he said that some look upon the elevation of temperature as purely psychical, while others believe it is the result of a direct effect on the heat center. The pulse-rate increases in frequency with each attack, but the pulse curve

usually runs nearly parallel to the temperature curve, though responding more slowly on recovery from status. Almost always there is Cheyne-Stokes respiration, but it is not so unfavorable a symptom as in some other disorders. Both pneumonia and pleurisy are fairly frequent complications. The prognosis of status is necessarily grave. A low temperature is supposed to be a fair sign, though there may be recovery after a temperature of 107.5° F. Paralysis of the muscles of deglutition is a very unfavorable sign. The gradual, steady increase in the symptoms is the most unfavorable sign of all. Many patients have a record of two to five status periods, and it is probable that the mortality does not exceed 25 per cent. It is possible to abort a case of status if taken in time, and certainly the present mortality should be reduced. The plan of treatment pursued in the cases mentioned in the paper was as follows: At the outset, the patient was given a dose composed of 25 grains of bromide, 20 grains of chloral and a large dose of opium and morphine. If the convulsions are not controlled, thirty or forty grains of chloral are given by the rectum, and if this is not sufficient, bromide is given hypodermically in a part of the body that will be the least painful if abscesses form, as they often do after such injections. The latter are very painful and should only be given in the stuporous stage. They usually control the condition.

Dr. Prout then took up the pathological side of the subject. He said that the modern belief was that the epileptic storm has its seat in the cortex. Recent experimental research seemed to warrant the following conclusions: (1) That the transmission of the impulse in epilepsy is through the extrapyramidal tracts which transmit motor reflex impulses; (2) that the sensory portions must be irritated in order to produce the fit, and (3) that the fit appears to be a complex reflex phenomenon. The paper was founded on a study of 13 cases. In all but two the post-mortem examination was made within seven hours after death. The changes found in the brain are by far the most pronounced in the status cases. The degree of chromatolysis seems to depend upon the number and severity of the convulsions. In the cells of the second layer the nucleus is swollen markedly; the nuclear membrane is hazy and indistinct, and the nucleolus is frequently replaced by a granular mass. These are especially numerous in the status cases. Many nucleoli were found far removed from the cells to which they belonged. He had examined the normal human brain with regard to this nucleolar extrusion, and had found it comparatively infrequent. Leucocytes clinging to degenerated nerve-cells were also very frequently observed. The neuroglia were studied in seven cases, and the conditions found to vary a good deal. A broadening of the outer cortical layer was fairly constant, and occurred apparently at the expense of the cortical layer. The condition of the neuroglia seemed to depend largely upon the condition of the epilepsy. It was more pronounced in the insane epileptic than in cases of simple epilepsy. When morbid processes attack the nucleus, the vitality of the cell itself is endangered. The increase in the neuroglia is the result of nerve-cell destruction. The author's conclusions were: (1) It would seem that epilepsy is essentially a sensory phenomenon; (2) the essential lesion pertains to the nucleus of the cortical cells and jeopardizes the cell; (3) the chromatolysis is probably a nutritional change brought about by the jeopardization of the nucleus; (4) the rôle of the leucocyte in the cortex after severe convulsions is most probably that of the phagocyte; (5) the neuroglia proliferation in epilepsy is one of the more remote consequences, and (6) epilepsy is a progressive disease of which status is the climax.

Dr. Schlapp said that he had had occasion to treat two cases of status during the past summer, and both had recovered. One case had had thirty attacks in eight hours. She had then become stupid and had finally developed hallucinations, the whole condition lasting two weeks. In both of the cases there was such a large quantity of albumin in the urine that the latter became solid on boiling. He thought this condition was commonly present in status. He did not think it right to assume that the second or third layer of cells could be taken as sensory cells, so much depended upon the particular region of the brain. Most of these cells were now looked upon, in opposition to the theory of Bruce, as associated cells.

Dr. Defendorf asked regarding the temperature of the case dying of status. He had had an opportunity of studying two cases, and in both there had been what had been called "acute alteration." This was often found in other conditions, particularly where there had been high temperature.

Dr. Sachs asked whether in these cases of status epilepticus gross changes had been found that might, in some way, have accounted for these cell changes. A number of years ago he had examined the brain of a child dying in status, and the one condition found at that time had been a very large subpial hemorrhage covering almost the entire brain. He would like to know whether in the brains examined by Dr. Prout similar conditions had been found. If they had, it did not seem to him fair to determine the true pathology of epilepsy from patients who have died in status. A truer knowledge of this pathology should be obtained from a study of the brains that had not undergone such secondary changes. The plates exhibited showed cellular changes such as had been reported in a number of very widely different diseases of the brain.

Dr. Schlapp said that he had seen recently a case presenting hemorrhages throughout the membranes.

Dr. Leszynsky said that fifteen years or more

ago he had published a paper entitled "Epilepsy as a Cause of Death." In every one of the cases coming to autopsy there had been intense venous stasis, and in some a few small hemorrhages. One or two of these patients died within two hours, and one after a single convulsion. A very competent pathologist had made the autopsies. At that time the most successful method of treatment of these cases had been early venesection, and he had seen no reason to change his view regarding the efficacy of this treatment. The injection of chloral into the rectum was certainly very satisfactory. He had practised venesection because of the intense venous stasis, not only found at autopsy but seen in the face of the patient.

Dr. L. P. Clark said that albuminuria had been frequently observed in the cases that they had studied, yet the quantity had varied greatly, and had not been at all in proportion to the severity of the seizures. In most of their cases there had been no systematized delusions present, and the delirium had resembled that of typhoid. A very large number of gross lesions had been found as the result of the severity of the convulsions. He had seen intense venous engorgement and hemorrhages, although sometimes these had been absent in very severe cases of status.

Dr. Prout, in closing, said he did not wish to be understood as saying that the invasion of the cortex with leucocytes is characteristic of epilepsy. It is well known that such an invasion is marked in general paresis. He had only mentioned the fact as showing that the leucocyte was carrying off effete material. In speaking of the cells of the second layer, he had referred to them as sensory in contradistinction to those which we are accustomed to associate with motor phenomena. He did not think it had been conclusively shown that these cells are associational in character. Many of the sections figured in the plates show the presence of punctate hemorrhages.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held October 18, 1900.

The President, Wm. H. Thomson, M.D., in the Chair.

Symposium on Infant Feeding.

Advantages of Sterilized Milk.—Dr. A. D. Blackader of Montreal opened the discussion. He said that the gastric digestion of infants is imperfect in that microbes which find their way into the digestive tract are not as readily destroyed and thus rendered harmless as in the adult. This barrier to the entrance of bacteria into the system not being present, sterilization of the food material supplied becomes absolutely necessary. Cow's milk is never sterile, even under the most favorable circumstances. If it is obtained from the cow with as great attention to cleanliness as possible and then immediately put on ice and kept at a low temperature until used, very few bacteria will be found in it. If these precautions are not taken, it may easily swarm with germs of various kinds. Some method of removing the bacteria is absolutely necessary. Pasteurization kills 99.8 per cent. of the microbes in full milk. It has been said that cream is more resistant to Pasteurization. Microbes that escape destruction are all of them sporebearers. The older the milk the more difficult it is to Pasteurize it.

Preservation of Milk.—Pasteurized milk will remain unchanged for a considerable length of time, especially if it is kept at a temperature just above 0° C. If it is not kept at this low temperature, however, fermentations are set up and these disturb infantile digestion. This liability to fermentation also occurs even in sterilized milk that has been heated up to 100° F. While Pasteurization is quite as effective as sterilization, it has no more advantages than the other process.

Bacterial Destruction.—All the now known pathogenic bacteria succumb to Pasteurization. The bacillus of yellow fever, of typhoid fever and of diphtheria have been shown by a number of experiments to be destroyed. Tubercle bacillus was thought to be more resistant, but Smith showed that the bacilli of bovine tuberculosis are destroyed at 140° F. if proper precautions are taken. The pellicle which forms over milk protects them so that this must be removed or the milk stirred during the heating process.

Changes Due to Heat.—When milk is heated certain changes which interfere with its digestibility take place. It is possible also that unheated milk may contain ferments which are an aid to digestion. In fresh milk the presence of a trypsin has been noted which is destroyed by heating. In recent years it has been found that immunity to disease in animals is not conferred upon their young by direct heredity. If the young animals are suckled by a mother who is immune to disease they acquire that immunity. The substances in the milk which confer this immunity, however, are destroyed by a heat of 60° C. These disadvantages of heating milk are now well recognized. It is necessary to choose between the two evils of a milk containing germs and one the digestibility of which has been impaired. It would seem, however, that the evils consequent upon Pasteurization are much less than those due to sterilization at a high temperature and that practically none of the pathogenic bacilli are left alive. The changes induced in the milk by Pasteurization are not very great.

Scurvy and Artificial Feeding.—Dr. J. P. Crozer Griffith of Philadelphia said that the American Pediatric Association had collected 379 cases of scurvy. As a member of the committee who made the report the present occasion seems a suitable one to discuss some of the features of that investigation. In 356 of the cases reported the diet of the children at the time the disease de-

veloped was given. Two hundred and fourteen of them were being fed on some proprietary food. In some cases sterile milk was used in addition to the food. In 44 of the cases some form of malted milk was employed. In 34 of the cases some brand of condensed milk was employed. In the others various of the well-known advertised foods were used. Fifty or 60 cases developed in those that were using a preparation containing insoluble starch. Altogether over 200 of the cases were receiving starch in some form in their diet. It is to be noted that this is 56 per cent. of the whole number of cases. Suspicion was aroused that the cause of scurvy was in most cases cooked or partially-cooked food which the infant's digestive organs were unable to assimilate. Several of the children, however, who developed scurvy were being fed on raw milk, while ten of them were fed exclusively on breast-milk.

Cure of the Scurvy.—The method of treatment employed for the cure of the disease was different in different cases. In only three was fruit-juice alone employed in addition to the diet which they had been given before. In 260 cases fruit-juice or meat-juice, together with a change in the diet, was employed. In 58 cases change of diet alone sufficed. Of these, in 24 cases, proprietary food was abandoned. In 20 of them the use of sterilized milk was abandoned. In the remaining 14 a cure followed the abandonment of starch in the diet. Two of the cases were cured by being taken from the breast and put on artificial food.

Interesting Scurvy Cases.—Dr. Griffith gave the details of some cases of scurvy in his own practice. In one family a pair of twins developed suspicious signs on the gums on the same day. These were neglected and a few days later the scorbutic hemorrhages and the painful joints developed on the same day in both children. Their symptoms yielded in a corresponding way to treatment and recovery was complete at the same time. In the treatment of scurvy it is probable that fruit-juice alone in addition to the ordinary diet will cure most cases. It does not seem probable that the scurvy is due to changes in the food produced by heat. Even if it were so it will be necessary to choose the lesser of two evils. Many infants will be protected from serious digestive troubles because of the heating of milk. A few of them will be exposed to an easily curable disease. It must be remembered that individual susceptibility plays an important rôle in the etiology of scurvy. Of two children fed on exactly the same material, one will develop scurvy, the other not. Any serious objection to continuance of sterilization can scarcely be urged from the present status of knowledge as to the connection between infant feeding and scurvy.

Pediatries in Europe.—Dr. T. M. Rotch of Boston said that the discussion evoked by Jacobi's paper at the Paris International Medical Congress showed that Europeans fail utterly to appreciate what America has done in a scientific way for the advance of our knowledge of infant feeding. Monti, to whom many Americans looked as a suggestive professor in the old days, seems unconscious of the work that has been done by his students, sometimes as the result of his inspiration. It is not surprising that Europeans should neglect the work done in America in other lines of medical research, though that is one of the most disappointing features of many a European medical discussion. But that they should utterly neglect the advances made all along the line in pediatrics in America seems altogether unwarranted.

The Use of Cereals.—Cereals are added to milk for infant feeding supposably for two reasons—first, because of their actual nutritional value; second, because they act as digestants. The nutritional value of cereals added to infant's food is extremely problematic. Starch is probably indigestible for the infant, and even if digested its nutritional value is not as great as that of milk. There seems to be very little difference in the value of the various cereals that have been employed. Barley-water has been especially lauded by some; Heubner declares his preference for rice; others have suggested the use of other cereal solutions as diluents. White in a series of experimental researches showed that barley-water when employed as a diluent produced a finer coagulum, but when barley-water plus lime-water was used as a diluent, the coagulum was still finer. A great deal depends, however, on the constitution of the milk, especially with reference to its albuminous constituents. Where the caseinogen is in excess the coagulum will be tough and coarse no matter what the diluent. Where it is lessened in amount simple dilution will produce a fine clot. It would seem, therefore, that the addition of cereal to milk for infant feeding is not needed and that its use is irrational and unnatural.

Emulsions.—The making of milk emulsions for infant feeding has attracted considerable attention of late years. The practical purpose is to obtain a food by separating the cream from the rest of the milk, and then adding to the watery part as much of the separated cream and other ingredients as may be necessary to produce a food having such a composition as will be best adapted for a particular infant. As a diluent for the fluid contents of the milk, lime-water in various proportions seems to be the best agent. When milk is Pasteurized a finer coagulum is produced than when it is left untreated, so that it is the Pasteurized milk which is used as the basis of the emulsion. It has been said that the separation of the cream from the fluid milk injures the nutritional value of the milk. Especially has it been urged that when the cream is separated by a centrifugal machine, a proper union of the cream and watery solution cannot be hoped for. As a matter of fact, the amount of cream obtained from milk by the ordinary gravity process and by the centrifugal separator is exactly the same.

In a series of observations made in this matter in Boston, 16 per cent. was the average amount of gravity cream as well as of centrifugal cream. As a rule, the objections to the use of emulsions for baby feeding come from those who have had least experience with them.

Proteids of Milk.—The estimation of the lactalbumen of milk does not give the total proteids. The amount of the two principal elements which enter into the proteids, namely, the lactalbumen and the caseinogen, varies at different periods of life and under changing circumstances. There is nearly always an increase of lactalbumen in infant's food demanded by the increasing age of the infant. This lactalbumen may be obtained very readily and in a suitable form from whey. The caseinogen may be obtained from milk. With an emulsion, the ingredients and amounts of which have been properly collected for a given case, there is no need to add cereals. Pasteurization of such an emulsion when made from fresh, clean materials is needed only if the emulsion is to be sent to a distance. After Pasteurization the material will stand transportation for long distances and yet remain sterile. Samples have been sent from the laboratory in Boston to Vienna and have arrived fresh. The doing away with Pasteurization removes certain objections that militate against the use of heat-prepared foods.

Selection of Wet-Nurse.—Dr. L. Emmett Holt, of New York, said that it is a matter of surprise to many that it should be so difficult a problem to provide a suitable food material for infants. Those who have had experience with the selection of a wet-nurse soon learn to realize how difficult it is to obtain even the proper quality of food for an infant when it is supplied in Nature's own way. It may be necessary sometimes to try as many as ten or twelve women before a suitable nurse, especially for a delicate child, can be obtained. It is no wonder, therefore, that the modification of milk for infant feeding is a very difficult matter and may require under delicate conditions the greatest amount of care in order to secure a suitable article. It must be admitted that breast-milk is the ideal food for the infant. All substitutes must imitate it. The nearest approach to it can be obtained by some modification of fresh cow's milk. The proportions in which the various ingredients exist in cow's milk are so different from those of mother's milk that considerable modification may be required. The oldest idea, and it has proved not unsuitable in numberless cases during the centuries, was to add water and a certain amount of sugar for the taste. The effort at present is to bring cow's milk more nearly to the average proportion of mother's milk.

Infant Food Formulae.—No single formula for the modification of milk will do general duty for all infants indiscriminately. The result of investigations has been not to prepare a food, but rather a method of feeding. The endeavor is to find the elements that are in unsuitable proportions for a given child and then to modify the milk so as to render it digestible and nutritious. In an individual infant suffering from indigestion, it may not be the milk itself, but some ingredient of it which is indigestible. The fats or the proteids, for instance, of a given sample may prove indigestible. If the errant ingredient can be found, its reduction in quantity may make the food digestible once more. For a long while, despite the theoretic promises of this method, success in its use was not very marked. The future looks brighter, however, for infant feeding now that we understand the practical difficulties as well as the theoretically-correct principles.

Four Elements of Success.—There are four factors that make for successful infant feeding with modifications of cow's milk. First, one must have the best fresh milk; too long a time must not have elapsed since it has been obtained from the cow; special precautions must have been taken to keep it clean, and it should have been preserved on ice from the moment of the milking until it is to be used. Second, there must be intelligent cooperation. Definite and minute directions must be given in writing as to the quantities to be employed in the preparation of the infant's food and the times of feeding. Third, personal supervision is necessary to see that orders are carried out. Fourth, every routine of the nursery must be scrutinized. Every point of sanitation must be carefully looked to, the conditions of air and light and cleanliness and clothing and the household surroundings must be examined.

Infant Indigestion.—The digestive disturbances of infants can be divided into two general classes. The indigestion of healthy infants and that of unhealthy infants. In healthy infants all digestive disturbances resemble one another more or less and can be treated on certain general principles. Of the digestive disturbances of unhealthy infants, the name is legion. Nothing is more puzzling or full of surprises than the many-featured phases of digestive symptoms that occur in infants once their digestive function has become chronically affected.

Method of Milk Modification.—For the rational modification of cow's milk, the approximate composition of ordinary milk must first be ascertained and then what is needed in addition to this for the infant's nutrition. At different periods of its life the child will need varying amounts of certain ingredients. The simplest method of preparing these modifications seems to be to take the milk, as it can be ordinarily obtained by a city family. In ordinary bottled milk the cream rises to the top and enables us to recognize what proportion of fatty material is contained in the food, as it is prepared for the infant. During the first few months of life the ordinary infant should receive about one-half milk and one-half cream. This can be best obtained by taking the upper third of the bottle of milk as it is ordinarily supplied by city dairies. During the second period

of the baby's life, that is, from about three to nine months an increase of the proteids is needed with about the same amount of fat, though proportionately to the whole of the food taken by the infant this represents a decrease in the fats. For this the upper half of the bottle of milk should be employed. After the ninth month the baby can be fed with the whole milk. As the baby grows the quantity of food given should be increased. This can be done by increasing the amount given at each feeding without any other modification than that suggested for the different periods. It is often true that delicate children are kept on too low a diet of proteids, because of too great dilution of the milk.

Standard Food Formula.—The food of an infant should not be ordered on general principles according to its age or weight. The digestive condition of the infant is much more important as regards the regulation of the quantity and quality of food that it should take than anything else. The infant's appetite should not be abused. Needless to say it should not be fed every time that it cries. The first symptom of digestive disturbances should be carefully looked for and precautions taken at once to prevent their becoming inveterate to the slightest degree. As soon as fretfulness and sleeplessness assert themselves something should be done immediately to avoid the digestive disturbance that threatens. The first food prescription given an infant should be considered experimental rather than definite. It is much easier to give too much than too little food. Begin with low percentages of all the ingredients and raise these as it seems necessary rather than the opposite course. An excess of fat especially is liable to disturb the infant's digestion and bring on the train of symptoms which may lead irretrievably to the obstinate indigestion that precedes marasmic conditions.

Breast-Fed and Artificially-Fed Infants.—In the discussion Dr. J. S. Winters, of New York, said that the contrast between the breast-fed and the artificially-fed infant is most striking. While the nursing child is almost never sick, the artificially-fed infant seems almost never to be well. It is the exception to find a healthy child that has been fed on the bottle. Statistics seem to show that while 8 per cent. of breast-fed infants die before the end of the first year, 51 per cent. of artificially-fed infants perish before they reach the same age. These are the statistics for private families. In institutions the bottle-fed infants fare still worse. In the Charité Hospital at Berlin from 59 to 93 per cent. of the infants under treatment die. At Budapest, where the same class of infants are in a hospital, only 15 per cent. of the infants die because mothers are required to nurse their own children, or wet-nurses are supplied. There is no question, therefore, but that as far as possible human milk should be the food of the young infant.

Cereals in Infant's Food.—Clinical experience as well as our theoretic knowledge of the infant's digestive organs make it clear that the addition of cereals to the infant's diet is irrational. The nearest approach to mother's milk is cow's milk. It has about the same ingredients and in nearly the same proportions and, moreover, it is of animal origin and so is a more natural food than any vegetable product. One of the great difficulties in city life is to obtain cow's milk, pure and fresh. There would certainly be much less difficulty in the feeding of infant children in our large cities if we could always obtain fresh cow's milk. Digestive disturbances begin as a result of the ingestion of low-grade, contaminated milk and then almost any food, no matter how suitable, becomes impossible of digestion for the child.

Natural Milk.—It must be remembered that many infants bear ordinary, absolutely unmodified cow's milk very well. For such infants dilutions will do harm because they will prevent the infant from obtaining its full complement of food as easily as it should. If fresh milk can be obtained it is better to give it raw than Pasteurized. Undoubtedly the application of heat to milk, either at high temperatures or at lower temperatures, over long periods, produces changes in the milk which make it difficult of digestion. When cream is to be added to milk gravity cream and centrifugal cream amount to the same thing.

Cereals Not Irrational.—Dr. Chapin said that cow's milk is a radically different substance from mother's milk. The more the two forms of milk are studied, the more is this realized. Cereals are not any more foreign to the infant's digestive organs than is cow's milk itself. The talk about its irrationality because of its being a foreign substance is therefore groundless. There is no doubt that it does good by making the coagulum of the milk finer and less tenacious. This mechanical advantage every one admits. If the cereal gruel be dextrinized before being added to the milk there need be no fear about its digestibility. When the coagulum of the milk is finer much more of the surface of the clotted portions is exposed to the action of the digestive juices. Not only this but the curd of milk produced by digestive action in the presence of a cereal are always much more porous than when cereals are absent, and so the gastric juice is able to penetrate them.

Mother's Milk Not Sterile.—Dr. R. G. Freeman said that mother's milk is usually not sterile. Frequently her nipple is infected and is cleaned only by the baby's tongue. Even in the human breast some bacteria exist and find their way into the milk.

The Curdling of Milk.—Dr. T. M. Rotch, of Boston, said that the reason for the differences between the coagulum of cow's milk and that of mother's milk is the presence of more caseinogen in cow's milk. The caseinogen might easily be increased in mother's milk, however, and then the curd produced by the digestive juices would be coarse and tenacious. Every doctor has seen mother's milk thrown up in reasonably large, tenacious curds.

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ORIGINAL ARTICLES.

THE SURGICAL IMPORTANCE OF JAUNDICE.

BY ARCHIBALD MACLAREN, M.D.,
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THE early theory regarding the causation of jaundice was that in most cases it was due to some mechanical obstruction. This position which has been proven to be to a great extent erroneous has led surgeons of the past to place altogether too much importance on the presence or absence of this symptom when studying the diseases of the biliary passages. Look at any of the more recent works on general medicine, for instance, Allbutt's System or Pepper's American Text-Book of Medicine, and see the long list of diseases in which jaundice is a symptom, as for example, typhoid, pneumonia, dengue, influenza, cerebrospinal, intermittent, relapsing, typhus and yellow fevers, pyemia, abdominal aneurism, heart disease, leukemia and all the different forms of pancreatitis, peritonitis and hepatitis.

Of course it is very true that the jaundice associated with many of these diseases is, as a rule, of a very different character from that observed in the true obstructive cases. As William Hunter says, "The jaundice is usually less intense in its character from that met with in mechanical obstruction, being frequently evidenced by a slight yellowish or greenish-yellow discoloration of the skin or conjunctivæ, rather than the dull golden yellow or green color of true obstructive jaundice.

The following case is so unusual in this connection that I will give Dr. Solberg's clinical report in full. Mrs. T. R. W., aged thirty-one years, born in this State of Swedish parents, herself mother of two healthy boys. Has always with few exceptions during early childhood enjoyed good health. During the last week of pregnancy she complained of constant itching all over her body and her skin was noticed to be of a muddy hue, but as her general health was good especial attention was not paid to the itching. Labor and puerperium were uneventful except that a sore on one leg, caused by scratching, took on an erysipelatous appearance on the fifth day of her lying-in period, but soon healed kindly under appropriate local treatment. When her baby was a few months old she went away visiting her parents in a neighboring town, where she spent the summer in apparently good health. She returned to her home in St. Paul in September, when the peculiar muddy complexion already mentioned, seemed a good deal more marked, but as she claimed to be in excellent health and had an abundant supply of milk for her child, no medication seemed necessary.

Later on she consulted me for nightly diarrhea, when I found that symptoms of obstructive catarrh of the bile ducts had developed. Her conjunctivæ and skin were deeply greenish-yellow, some itching, foul-smelling, nightly diarrhea, stools clay or cream-colored, urine very dark, etc., but the general health was excellent, appetite and strength good, mind cheerful. I then commenced to prescribe remedies generally used under such circumstances and she continued to take them for a long time, but without apparent benefit. She continued to nurse her baby and appeared to feel perfectly well, except for her nightly diarrhea. Suddenly one day, when the baby was about eleven months old, she was seized with severe pain in the hypochondriac region extending down somewhat into the right lumbar region. This was diagnosed as biliary colic and controlled by hypodermics of morphine. I also gave directions that stools be examined carefully for calculi. As pain continued without intermission, except when controlled by morphine, for a number of days, and some fulness and great tenderness developed in the regions mentioned, with a temperature ranging between 100° and 103° F. and no stones could be found in the feces, I deemed a consultation necessary. Drs. P. Ritchie and A. MacLaren saw the case with me, and both concurred in the diagnosis of obstructive jaundice and thought that, if she did not improve in a few days, an operation would be imperative. No improvement taking place she was removed to Bethesda Hospital for operation. She was then deeply jaundiced, and had been so continuously for eight months or more; the stools were clay-colored; the urine was very dark, and there was continued pain in the right hypochondrium and lumbar region; also some emaciation.

Mrs. W. was operated on April 9, 1897. An incision was made in the right semilunar line and a perfectly normal biliary system demonstrated. No inflammatory thickening or adhesions, no obstruction. An inflammatory mass, however, was palpated in the right loin continuous with the lower end of the right kidney. An incision in the back over the crest of the ilium opened a large appendicial abscess. Every touch of the knife was followed by excessive hemorrhage as is often the case in chronic jaundice. Mrs. W. lived only a few hours after the operation, dying from the shock of hemorrhage and acute sepsis. A post-mortem was made by Dr. Solberg and myself, when a post-cecal appendicial ab-

scess was demonstrated, drained into the incision in the back. There was absolutely no disease of the liver or the biliary passages found. The bile was normal in quantity and quality and there was no obstruction in the ducts, or inflammation of the mucous membrane lining the biliary passages. This case is quite unique, no similar case being reported that I have been able to find in quite an extended and fairly thorough study of the literature.

Since this paper was prepared a case of marked jaundice of considerable duration was reported by Groose of Sioux Falls, South Dakota, as having been observed by him when he was a resident of Mercy Hospital, Chicago, several years ago, where an appendicial abscess was found at the time of operation. The cause of all these forms of jaundice is still an unsettled question, but is probably due to the influence of septic germs which are circulating in the blood and in the lymph in these cases.

Dr. Henry G. Graham, in an article just published in the *New York Medical Journal,* entitled "Microbes—What are They?" gives the result of his experiments which go to prove that the protozoa, which are frequently found in the fluids of the body and can readily be seen with the naked eye, are the hosts from which under proper conditions are developed living microscopic subdivisions or buds which, when stained, give every evidence of being streptococci, staphylococci, and perhaps tubercle bacilli. If this proves to be true what a wide field for research this opens up in the study of disease and its causation, of which our small subject is a very infinitesimal part.

But to return to jaundice; Hunter further says, when speaking of toxemic jaundice, as, for example, infectious jaundice, icterus gravis and Weil's disease, "In a number of these cases, indeed organisms of varying character have been described as occurring in the liver, there is hardly any reason to doubt the microbic origin of toxemia jaundice." Dr. George Adami, of Montreal, in his very interesting and scholarly article on latent infection and subinfection, has proven that many of the forms of chronic inflammation, such as are found in cirrhosis of the liver, in hemochromatosis and probably in pernicious anemia, are due to the presence of bacteria which were being taken up and more or less perfectly killed by the tissues, but at the expense of their own vitality. He says, "As a consequence of chronic inflammatory disturbance in connection with the gastrointestinal tract, there may for long periods pass in through the walls of the stomach or of the intestine a greater number of ordinary bacteria inhabiting the tract, and, while the bacteria undergo the normal and inevitable destruction by the cells of the lymph-glands, the liver, the kidney, and the other organs, the excessive action of these cells and the effect on them of the bacterial toxins, liberated in the process of destruction, may eventually lead to grave changes in these cells and in the organs of which they are a part—changes of a chronic nature.

Adami quotes Dr. Fütterer of Chicago, as follows: "He was able to gain the bacillus prodigiosus from the pelvis of the kidney two minutes after injection into the jugular vein of the dog, while, inoculating animals with the pyococcus aureus and the bacillus prodigiosus, and following Biedel and Kraus he collected the bile from a cannula inserted in the common duct and gained abundant culture of these micro-organisms from the bile within two or three minutes after inoculation into the left side of the heart. Thus, I am led to conclude that where the number is not too great, the liver tissue is capable of wholly destroying and digesting the bacteria. Where, however, this function of the liver-cells becomes exhausted by the taking up of excessive numbers of the bacteria, it is possible for the bacteria to be discharged or secreted into the bile in a still living state." Adami further says, "These observations appear to me to clearly demonstrate that, while one of the functions of the lymphatic glands is to take up and destroy bacteria circulating in the lymph, a function of the liver, both as regards its endothelium and its cells, is to take up and destroy such bacteria as are introduced by leucocytes into the venules of the portal system and gain entrance into the portal blood, while similarly a function of the kidney parenchyma, more especially of the convoluted tubules, is to remove bacteria circulating in the systemic circulation."

These conclusions are of especial interest in studying the causation of cholecystitis and the microbic origin of gall-stones. Last winter I presented to the Minnesota Academy of Medicine a paper on the relationship between cholecystitis and gall-stones, in which I contended that in the great majority of cases cholecystitis was the disease and the stones only products or symptoms of the disease. The bile is an excellent culture medium and cultures of the colon bacillus and the ordinary pus germs, but particularly the bacillus typhosus, have been found by many observers in the gall-bladder of persons suffering from typhoid—in other cases years after a typhoid attack, and a few times in cases that had never had the disease; and Cushing of Johns Hopkins reports that on two occasions he has artificially produced gall-stones by injection of the culture into the gall-bladder of animals. Of course, the inflammation may extend from the intestine, but probably the great majority come from the blood in the manner that Adami has pointed out.

But to return to the infectious nature of jaundice, in the *Zeitschrift für klinische Medicin,* Band 36, three cases of pneumonia are reported in which icterus had been present and in which the colon bacillus was found in the bile. While in other cases that had no icterus the bile was sterile. Of course, the liver is the cesspool or filter of the body and has the power of filtering

out or killing infectious germs which are circulating through the blood incased in its leucocytes. At times under a sudden strain, or depending on the number or intense virulence of the germs or of the poison produced by the germs, the liver-cells probably become swollen and temporarily compress the finer biliary channels and thus produce more or less well-marked attack of jaundice. Whether this theory is correct or not this mild jaundice is of no practical surgical importance, except perhaps to attract our attention to the liver and gall-bladder. Aside from its being of no positive value as a symptom, it is not even a negative sign, for many cases where extensive disease of the biliary passages, such as exist with every case of cholecystitis with and without gall-stones, have been shown to exist for months and years without a sign of jaundice at any time in their course.

Mayo Robinson reports 167 cases of cholecystotomy in which he found gall-stones present 140 times; in 100 of these cases no jaundice had been present at any time during the course of the disease, and in most of the cases where it had been present it was only very slight in amount or present during but two or three of the attacks of colic.

During the past year I have performed 13 operations upon the gall-bladder and bile-ducts; two of these were exploratory in character and no disease was found; in one, adhesions existed between the gall-bladder and the pylorus. The remaining 10 all showed gall-stones in greater or less number, and all of these, with one exception, showed evidence of cholecystitis, yet in not one of them had jaundice ever been present at any time during the course of the disease. Several of these patients had had the disease for several years, having suffered many attacks which were supposed to be due to the passage of gall-stones.

Mild and transient attacks of jaundice occasionally accompany cholecystitis and catarrhal inflammation of the bile-passages by the obstruction produced by plugs of mucus, although I think that such a result is rare. Fagge thinks that catarrh of the bile-ducts never gives rise to enough swelling of the mucous membrane to produce jaundice. If such a result is ever produced it would be most likely to occur, accompanying a catarrhal inflammation of the duodenum, by obstructing the common duct where it passes obliquely through the intestinal wall to discharge at the ampulla of Vater.

A more pronounced form of jaundice is seen in connection with Weil's disease in acute yellow atrophy and with abscess of the liver. In the first of these the jaundice is the most striking symptom of the disease. It usually shows itself about the second or third day of the disease. It rapidly increases until the patient is quite yellow at the end of twenty-four hours. It lasts about fourteen days and disappears slowly. In acute yellow atrophy of the liver the jaundice does not last quite as long, but is usually quite intense in character. In abscess of the liver the jaundice is as a rule not well marked, but this is only one of the times in which there is any indication for surgery, unless the first be complicated, as it sometimes is, by cholecystitis. In abscess of the liver the indication, as in any other abscess, is to reach and drain the abscess cavity. When superficial, and if adhesions have been found, this is a very easy matter. But in deep abscesses, or if the abscess is on the superior surface of the liver, so that it is necessary to reach it through the pleural cavity, it is often a very difficult and dangerous procedure. These abscesses, if neglected, have at times a deep and a superficial cavity connected by a small and usually a tortuous channel. If the deep cavity is not reached, you may not relieve your patient. I remember opening a large superficial abscess of the back, several years ago, in a very sick man, who died a few days after the operation. A post-mortem demonstrated just such an abscess, very imperfectly drained, in the center of the liver.

When we come to well-marked and persistent jaundice, the great majority of these cases we find to be suffering from carcinoma of the liver. This is a very common disease. Between the years 1885 and 1893, inclusive, 4200 autopsies were performed at Guy's Hospital, and in 3 per cent. of this number either primary or secondary carcinoma of the liver was found.

W. Hale White, in speaking of this subject, says, "About half the patients who during life present symptoms of carcinoma of the liver are jaundiced; and this nearly always means that enlarged carcinomatous glands in the transverse fissure are pressing on the common bile-duct. But in some cases the pressure is due to the primary growth, especially if it be in the head of the pancreas; and occasionally enough of the hepatic ducts in the liver may be compressed by nodules of new growth for jaundice to appear. Or there may be primary cancer of the bile-ducts. It is extremely important to bear in mind that by far the most frequent cause of long-standing jaundice is cancer of the liver, which always produces deeper jaundice than any other common disease; thus, patients suffering from cancer present in the most extreme form those symptoms which are due to circulation of bile in the blood and its absence from the intestines. The jaundice, too, is permanent; the only exceptions to this rule are those excessively rare cases in which, although the patient has cancer of the liver, the jaundice is due to a gall-stone in the common duct, which is either passed on or slips back. The skin, deeply and slowly stained by bile, gradually becomes more and more green and ultimately assumes a peculiar earthy, dark-green tint, which, especially if the patient is aged and wasted, is almost diagnostic of cancer of the liver. The other effects of bile in the blood are also evident; the urine is very dark and has a

yellowish froth, the numerous scratch-marks show the intense pruritus. The bitter taste in the mouth is very unpleasant, the sweat may be bile-stained, and if, as often happens from secondary deposits in the lungs, the patient gets bronchitis or pneumonia, the expectoration may be yellow. There are few things more characteristic in medicine than to see an aged, gray-haired patient extremely wasted, with dry, dark-green skin hanging in loose folds, lying perfectly still, so drowsy that he is more dead than alive. If we turn down the bedclothes the liver may be seen deforming the shape of the abdomen, and it will be noticed that the sheets are stained yellow by urine or sweat. The absence of bile from the intestine causes indigestion and constipation, and the motions are pale, smell horribly, and contain much undigested fat."

The surgery of cancer of the liver is very unsatisfactory. The disease is, in my experience, very aggravated and the end is hastened by even an exploratory operation. Cholecystotomy and drainage give relief except in cancer of the common duct. Cancer of the gall-bladder, which is almost always found in cases when gall-stones have existed for years, should be removed if the liver be not too extensively infiltrated.

One of the more intense forms of jaundice is found in connection with stone in the common duct. Fenger and Osler have both described the ball-valve-like action of such stones, which accounts for the intermittent jaundice which usually accompanies this condition. The presence of a stone in the common duct, either floating or impacted, almost always produces cholangitis or infective catarrhal inflammation of the bile-ducts. Robeson describes it as follows: "The usual history is one of spasms for several years without jaundice; then comes a more severe seizure followed by temporary icterus. If the gall-stone pass, there is an end of the trouble; if not, the next attack of pain is probably followed at once by a shiver and by all the symptoms of an "ague fit," the temperature frequently reaching 104° or 105° F. After it passes off the skin is deeply tinged and the jaundice may persist, although inconstant in degree; it rarely, however, disappears completely between the attacks; there is usually a slight icteric tinge of the conjunctivæ, even though the interval between the attacks may be one of weeks or of months. The rigors may be repeated daily or at irregular intervals."

My conclusions, therefore, are: (1) That slight attacks of jaundice are of comparatively little surgical importance, and that the majority of surgical disease of the biliary passages have no jaundice at all. (2) That persistent jaundice especially if progressive is usually a contraindication. (3) While on the other hand intermittent, deep jaundice, especially if associated with chills and a rise in temperature, denotes a stone in the common duct which urgently demands removal.

THE HYDRIATRIC TREATMENT OF TUBERCULOSIS.[1]

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(Continued from page 732.)

In the employment of general cold applications in cases of pulmonary tuberculosis it is necessary to observe with care certain precautions.

1. A tonic cold application should never be made when the surface is cold, when a chill is impending or when the patient feels chilly, nor when the temperature is high.

2. Cold applications should not be made to the entire surface at the same instant until the patient has been trained by carefully graduated partial cold applications, in which the whole surface is gone over by applications to small territories in succession. The danger of pulmonary congestion from retrostasis is thus avoided. This is especially necessary in cases in which there is a hemorrhagic tendency. When the application is made to small areas in succession, as in the wet hand-rubbing (Fig. 5), cold mitten-friction (Fig. 1), cold towel-rub (Figs. 6, 7, 8), reaction is produced in each part before proceeding to the next.

WET HAND RUB

Fig. 5

Thus the general retrostasis is avoided and pulmonary congestion is not produced.

3. The intensity, duration and frequency of applications must be accurately adapted not only to the patient's ability to react, but to his power

[1] Read before the American Climatological Association, Washington, D. C.

to digest and assimilate, the aim being to stimulate constructive metabolism more than destructive change. A loss of weight indicates the necessity for rest from exercise and diminished intensity, duration or frequency of the cold application.

4. In applications for the lowering of temperature, all the antithermic measures such as are used in typhoid fever and other infectious fevers, as the Brand bath, the cooling pack, cannot be safely employed because of the intense internal congestion produced by these measures and for the further reason that the resistance of the body and its heat-making capacity are greatly reduced, so that only mild measures are tolerated. The neutral bath, wet hand-rub, wet towel-rub, administered carefully, and at temperatures ranging from 85 to 92° F., are best suited to the purpose. The cooling head-compress and the cold abdominal and the cool chest-compress are also useful as a means of producing fever.

5. Great care should be taken to avoid producing prolonged chill at any time, and especially in the beginning, measures which produce retrostasis by causing contraction of the blood-vessels of the entire cutaneous surface are not well tol-

COLD WET TOWEL RUB TO CHEST.

Fig. 6.

erated except in the incipient stages of the disease.

6. The patient's weight, general strength, appetite and temperature are matters which should be carefully studied in relation to the treatment. An increased loss of weight indicates the necessity for rest and decrease in the intensity, duration or frequency of the treatment. Loss of appetite and of strength indicate the necessity for the adoption of the same measures. Fever inter-

COLD WET TOWEL RUB TO ARM.

Fig. 7.

dicts short cold applications and requires the application of prolonged tepid measures.

7. An aggravation of any of the patient's symptoms indicates a necessity for the modification of the treatment. A proper management of hydriatric treatment secures very prompt or almost immediate alleviation of symptoms. A contrary result should be accepted as evidence for the necessity of a change.

8. By the employment of these general principles, we may confidently expect to secure some degree of alleviation of all the symptoms even in the worst cases; in the average case, great improvement and a lengthening of life amounting to many months and sometimes several years; and in favorable cases, suppression of the fever and the night-sweats, improvement in appetite and weight, and decided gradual lessening and final disappearance of the cough and expectoration, restoration of strength and general vigor and, finally, disappearance of the bacilli and complete suppression of all symptoms.

The patient should continue the treatment in a modified way after the disappearance of all the symptoms not only for a few weeks but for months, even years. In fact, the habitual employment of the daily cold bath may be regarded

as one of the best of all safeguards for persons who have been cured of the disease by hydriatric measures. After having made use of most of the above described measures for the last twenty-five years and in a large number of cases, I feel

COLD WET TOWEL RUB TO FEET.
Fig. 8.

no hesitation in saying that they are capable of accomplishing more for the radical cure of tuberculosis than any or all other known measures.

Symptomatic Measures.—While the various distressing and threatening symptoms present in this disease are for the most part relieved by the general treatment here outlined, special applications of various sorts render great service. The general symptoms for which the above treatment acts almost as a panacea, are anemia, nervous and muscular weakness and emaciation. The relaxation and unhealthy condition of the skin likewise rapidly disappears under the powerful vasomotor gymnastics of cold-water applications. Various localized and special measures are needed to meet particular conditions and symptoms. The following measures recommended for special conditions have all been tested and proven valuable in the hands of the writer and his colleagues in dealing with the conditions for which they are commended.

Cough.—The chest-pack at night (Figs. 9-12). Sipping hot water when the paroxysm is threatened, in cases in which the cough is due to irritation in the throat. If hard coughing is due to the viscidity of the secretion, copious drinking of warm or hot water will afford relief. When the cough is exceedingly troublesome, the chest-pack should be worn during the day as well as at night. The chest should be rubbed well, first, with the hand dipped in water at 50° F., then with the dry hand, before the pack is applied. In cases in which emphysema exists, with cavities in which secretions accumulate to the detriment of the patient, the cough being too weak to expel the secretion, the expulsive efforts of the lungs may be reinforced by slapping the chest with the hand or towel dipped in ice-water just before applying the pack. These measures should not be applied if there is danger of hemoptysis.

Through the nervous and vascular relations of the skin with the internal viscera it is possible by means of thermic applications to the surface of the body to exercise almost complete control over the general movement of blood in the body and local blood-supply as regards both volume and rate of movement of blood. Every internal viscus is represented from the surface of the body by an area with which it is in reflex relation through the vasomotor centers. The cutaneous areas related to the lungs comprise the skin covering the chest, especially the anterior portion of the chest, the shoulders, the anterior lower surface of the neck, the arms, especially the palms of the hands. Applications to this surface produce effects differing according to the temperature, duration, and mode of procedure. A short cold application produces contraction of the bronchial vessels, which is followed after the withdrawal of the application by dilatation with increased activity of the bronchial vessels and increased movement of the blood through the lungs. Prolonged cold applications produce prolonged contraction of the bronchial vessels provided the sensibility of the cutaneous nerves is maintained by occasional short applications, by rubbing with warm dry flannels, by the removal at frequent in-

ROLLER CHEST PACK. (First Step.)
Fig. 9.

tervals of the cold application long enough to allow reaction to occur, or by allowing the cold compress to become slightly warm before removal.

A heating compress, that is a cold compress well covered and allowed to accumulate heat until it attains the ordinary temperature of the skin or a little more, causes first a brief contraction of the bronchial arteries, followed by a dilatation and increased activity of the nutritive vessels of the lungs with diversion of blood into the intercostal veins, thus facilitating the movement of blood through the lungs and diminishing passive congestion and encouraging leucocytosis. Short hot applications to the chest-wall divert blood from the bronchial vessels into the collateral vessels—the internal mammary and the intercostals.

By alternate hot and cold compresses, a sort of pumping action may be operated upon the lungs. The cold application contracts the small vessels, thus emptying the tissues, while the succeeding hot application instantly dilates the vessels, admitting a new supply of blood, which by the succeeding cold application is forced onward into the venous circulation. The effect of a hot application can be renewed as often and as long as desired by brief cold applications at intervals of ten or fifteen minutes. The effect of cold applications may likewise be prolonged by brief applications of heat at short intervals.

The chest-compress not only combats the irritation and passive congestion to which the cough and expectoration are due, but lowers temperature and by increasing the movement of healthy blood through the parts improves the nutrition of local cells, removes and neutralizes the toxins by with their resistance is lowered or destroyed and especially encourages leucocytosis, the most effective means by which the body can combat the bacillus.

The effect of the chest-pack in relieving the cough is often magical. Patients who have been almost entirely deprived of rest by a troublesome night cough are often at once so relieved that abundance of refreshing sleep is obtained by the simple application of the chest-pack at bedtime. In cases in which the circulation is feeble the wet towel should be covered with oiled muslin, mackintosh or gutta-percha tissue, in addition to the flannel wrappings. Either the roller or the square chest-pack (Figs. 13-16) will be found convenient for use in cases of this sort.

Expectoration.—When expectoration is scanty, copious water-drinking is advantageous by increasing the secretion of the pulmonary mucous membrane. The viscid secretion is so diluted that it may be easily expelled. The chest-pack diminishes excessive secretion by relieving congestion, at the same time relieving irritation and resulting cough when expectoration is not present.

Pain.—Short fomentations followed by the heating compress are the best means of relieving pain. Pleuritic pain sometimes requires the application of a tight bandage about the lower part of the chest. If necessary, hydriatric applications may be applied over the outside of the bandage. Fomentations applied to the chest should be short, not more than five to eight minutes, and as hot as can be borne. The heating compress should be prepared with very cold water, should be wrung very dry, and should be instantly applied when the hot compress is removed.

Hemorrhage.—This grave symptom is not, of course, always easily controlled. Even hydriatric applications sometimes fail because of the large size of the ruptured vessels giving rise to the hemorrhage. The best measures are hot applications to the lower extremities, as the hot leg-pack, cold compresses applied to the chest, consisting of a folded towel or six or eight thicknesses of cheese-cloth. Very hot applications applied to the cervical spine, covering especially the vertebræ prominens. Solly has called attention to the fact that atropine, if used in sufficiently large doses (1/50 of a grain), sometimes renders service in checking hemoptysis by lowering blood-pressure. Blood-pressure may be lowered to almost any degree desired by the hot blanket-pack and by vigorous friction of the skin. By these means the blood-vessels may be dilated to such a degree as to contain nearly two-thirds of all the blood in the body. In the application of friction the rubbing should be outward from the heart, or following the distribution of the arteries, so as to lessen the movement of the blood toward the heart and the chest. Reflex

ROLLER CHEST PACK. (Cheese Cloth in Place.)
Fig. 10.

contraction of the pulmonary vessels may be induced by ice to the hand and over the neck. Care must be taken to keep the arms warm so as to favor hyperemia of these parts and collateral anemia of the lung. No part of the surface, with the exception of the chest-wall, should be allowed to become chilled. It is often better to apply a fomentation to the whole back to relieve the bronchial arteries by diverting blood into the intercostals while, at the same time, contracting the vessels of the lung by cold applications to the front chest, preferably a cheese-cloth compress wrung out of ice-water and renewed every minute. If the application is long continued, the skin should be rubbed with dry, warm flannel at intervals of five to ten minutes to maintain cu-

ROLLER CHEST PACK COMPLETED. (Front View.)

Fig. 11.

taneous sensibility which is essential for the stimulation of the vasomotor centers.

Dyspnea.—Paroxysms of dyspnea are best relieved by short, hot applications to the spine, the hot foot- or leg-bath and the hot leg-pack. Hot sponging of the chest and spine are excellent measures. When due to disordered digestion, fomentation over the stomach should be administered. A warm enema when constipation exists. A fomentation to the spine with cold bag or compress over the stomach is useful in dyspnea due to distention with gas.

Irritation of the Throat.—This condition, which appears in its most aggravated form in cases of laryngeal tuberculosis, requires the throat-pack, which may be worn night and day. Hot-steam inhalations are sometimes of service, but generally fail in tuberculous laryngitis.

Chill.—This symptom requires rest in bed, wrapping in blankets, hot bottles to the sides and feet, hot-water drinking. The hour at which the chill arrives having been ascertained, the patient should be ordered to bed half an hour or an hour before the time at which the chill is expected to occur. Rubber-bags filled with hot water or hot bottles should be placed at the sides and feet. He should be wrapped in warm blankets, and, if necessary, a dry pack should be administered in the ordinary way. The occurrence of slight perspiration will do no harm, provided it is not induced too rapidly. Great care should be taken to avoid subsequent chilling after perspiration has occurred. If the intensity of the chill be lessened, the reactionary fever will be less intense.

Fever.—When elevation of temperature is a marked symptom, the neutral bath may be employed with advantage and with perfect safety at a temperature of 92° to 95° F. for an hour. The best time for the bath is half an hour to an hour before the time at which the temperature usually reaches its greatest intensity. By this means the febrile process may be controlled and as the application is renewed from day to day, the febrile movement may be found to yield more readily. The chest-pack also assists greatly in reducing temperature. When the temperature of the patient rises at night to 101° F. or more the compress should be lightly wrung in the application of the chest-pack. Thus, considerable antipyretic effect may be secured. Free water-drinking aids temperature reduction by eliminating the bacterial toxins to which the temperature elevation is due.

Night-Sweats.—Profuse perspiration is but the natural cooling off of the fever. Suppression of chills and fever is quickly followed by this appearance of the night-sweats. Sponging the whole cutaneous surface with water as hot as can be borne just at bedtime is an excellent means of lessening the cutaneous activity and securing comfortable sleep.

Cardiac Disorders.—More or less cardiac disturbance is likely to occur in tuberculosis as a result of the great diminution of the respiratory area. Hypertrophy or dilatation of the right heart is frequent from this cause. Excessive action of the heart should be controlled by rest in bed, and the application of the ice-bag over the heart, or the cold precordial compress. The application may be continuous in severe cases; in other cases the compress should be applied every other hour. Short applications of the cold precordial compress are equally valuable in cases of cardiac weakness shown by feeble, frequent pulse, cyanosis, and laborious respiration. The duration of the application should be from fifteen to twenty minutes twice a day. Later the time may be extended to forty minutes or even one hour, forenoon and afternoon. There is no agent which exercises more powerful control over the heart than the cold precordial compress.

It acts with greater promptness and certainty than digitalis or any other so-called heart tonic. Short applications slightly energize the heart; prolonged applications exercise an equally marked sedative influence.

Digestive Disturbances.—These are generally of the atonic variety. The stomach is dilated in a large proportion of cases of pulmonary tuberculosis. In fact there is no doubt that digestive disorders, with resulting failure of nutrition, lay the foundation for the disease in a great majority of cases. The futility of stomachics and so-called digestive stimulants of various sorts, which are commonly used in tuberculosis, has been well shown by Skeritt.[1] This observer found by post-mortem examination that the activity of the pancreatic extract in consumptives was diminished fifty per cent. The diastatic examination of the saliva in living consumptives showed depreciation of the salivary secretion to the same degree. These observations agree with those of the writer as to the condition of the saliva in tuberculosis. Its activity is almost invariably diminished. This fact accounts, without doubt, in large measure for the emaciation of consumptives and their inability to digest starchy foods and fats. Digested foods are required and the application of such measures as will improve the metabolic activity of the secreting glands.

The most useful foods are such as have been subjected to the preliminary digestion of the starch, either by means of heat or by vegetable diastase. Malt is useful as a food rather than as a digestive agent. It should be taken freely to the extent of several ounces daily. Maltose is easily converted into levulose, the form in which sugar enters the blood. Starch in the form of mushes and starchy vegetables is digested very slowly while it ferments and sours easily. Starch converted into achroodextrine by exposure to temperature sufficiently high to brown it slightly, is, next to maltose, the most assimilable of foods. Toast and zwieback and roasted or browned rice are excellent examples of well-cooked farinaceous foods. Sweet fruits are still better, presenting sugar in the form of glucose already for absorption and assimilation. Grapes and grape-juice are especially rich in glucose, also sweet apples, figs and most other sweet fruits. Malted milk and cream, malted nuts and various malt and heat-digested cereals are useful in these cases as fat-producers.

Cold water is the most valuable of all remedies for this purpose. The general cold bath promotes glandular activity in all parts of the body, and it promotes the activity of the peptic glands, as has been clearly shown by examination of the gastric fluid, and by its general restorative effects promotes all the metabolic processes. The application of the ice-bag over the stomach for half an hour before eating increases the digestive power of the stomach as shown by the increase of appetite. The CO_2 compress is still more effective as a peptic promoter. The prolonged application of the hot compress after eating is as active in promoting digestion as the ice-bag before the meal. A quarter of a glass of ice-cold carbonated water may be taken half an hour before the meal with advantage. These measures are infinitely superior to any medicinal remedies which can be administered in promoting the appetite and digestion. Predigested foods should be used in conjunction with the measures suggested.

Vomiting.—This symptom is generally the result of violent coughing. A dry dietary, eaten slowly while lying down, is best. The patient should recline half an hour before eating in order

ROLLER CHEST PACK COMPLETED. (Back View.)

Fig. 12.

that the breathing may become tranquil and the food should be eaten very slowly to avoid hurried respiration. When cough is excited reflexly by irritation of the sympathetic, the hot and cold trunk-pack or the hot chest- and trunk-pack, or both combined if necessary, should be applied half an hour before food is taken, and the duration of the compress should be two hours, or at least an hour, after the completion of the meal, the patient remaining in the meantime in a horizontal position. In mild cases a compress extending from the umbilicus to the clavicle applied half an hour before eating will be found sufficiently quieting to the sympathetic centers to prevent both cough and vomiting. A hot and cold trunk-pack consists of a towel wet

[1] Year-Book of Treatment, 1896.

in cold water, wrung dry, and wrapped around the trunk, a hot bag over the stomach, and a warm, dry, folded blanket tightly enveloping the whole. The hot and cold chest-pack is applied in the same way, only the hot application is made to the back instead of to the front of the chest.

Diarrhea.—When due to tuberculous lesions of the intestines or mesenteric glands little more can be expected than moderate mitigation of the condition. If considerable pain is present, very hot fomentations should be applied for fifteen minutes once a day. This should be followed by the heating compress to be worn night and day, changed once in four hours. The hot enema is sometimes useful.

In conjunction with hydriatric treatment, massage, carefully graduated and prescribed exercise, manual Swedish movements, Swedish gymnastics, out-of-door life, and climatic change, may be expected to accomplish all that can be done in the curative treatment of pulmonary tuberculosis. If some assistance may be obtained from the local use of antiseptics and the administration of creosote and other measures, the chief reliance must be placed upon the powerful physiological measures which have been outlined, and which experience has proven to be capable of accomplishing results which are truly marvelous when compared with the results ordinarily obtained in this most unpromising class of cases.

Winternitz reports the cure of a large percentage of the cases which have come under his care at his institution at Kaltenleutgeben, the charming suburb of Vienna. Dr. Riley, Superintendent of the Colorado Sanitarium, of Boulder, Colo., has reported a series of fifty-one cases of recovery, all of which were treated by hydriatric methods combined with rational hygienic care and the excellent climatic advantages of the Rocky Mountain region, at an altitude of about 5000 feet. At the Guadalajara Sanitarium, Guadalajara, Mexico, most excellent results have been obtained by the same means. Scores of persons are to-day leading useful lives as the result of the employment of these rational measures at the institutions named, who would have unquestionably been buried long ago without the treatment administered.

Of the 240 cases treated within the last three years at Boulder Sanitarium 160 have been cured or very greatly and more or less permanently improved. A large proportion of the remaining 80 have been temporarily helped to a marked degree, even though the disease was far advanced. It is very rare indeed that patients who are subjected to the treatment outlined in this paper do not very quickly show signs of improvement in increased appetite, lessened fever, lessened night-sweats, and gain in flesh. Patients not infrequently gain at the rate of two to three pounds a week for several weeks in succession. The cough is lessened, strength as well as weight improves, and not infrequently the patient finds himself at the end of a few months looking as well and as free from pain and discomfort as ever in his life. Slight dyspnea is often the only symptom which remains behind. The permanence of this symptom being the natural result of the lessening of the respiratory area occasioned by the pathological processes characteristic of the disease.

It is my firm belief that the general adoption of hydriatric measures in the treatment of pulmonary tuberculosis by the profession at large, and especially the application of these measures to the disease in its incipient stages, would result in saving at least nine-tenths of the sufferers from this disease from the untimely death to which almost every one is doomed under ordinary medical management.

[To be concluded.]

PERNICIOUS ANEMIA: REPORT OF A CASE.

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In 1855 Addison in his well-known paper on "Disease of the Suprarenal Capsules" first brought to the attention of the medical profession the disease idiopathic or pernicious anemia, speaking of it as follows: "For a long period I had from time to time met with a very remarkable form of general anæmia, occurring without any discoverable cause whatever—cases in which there had been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous or malignant disease."

Biermer in 1868 discussed at length the pathology of the affection, and Wilks, Lebert, Channing, and Gusserow have all made additions to the literature on the subject. Fortunately it is a comparatively rare disease, for in spite of study and investigation by both clinician and pathologist the cause has to the present time remained in obscurity.

Geographically, progressive pernicious anemia is widely distributed. At one time it was thought to be especially frequent in the Cantons of Switzerland owing undoubtedly to the fact of its being confused with the other serious anemias.

Etiology.—This is very obscure, there being no known or appreciable cause. As yet it is impossible to say whether the disease is produced by a defective hemogenesis or hemolytic process. A number of authorities among whom are Stephen Mackenzie and F. P. Henry believe that there is a fault somewhere in the process of blood-making and that from this deficiency the red corpuscles become especially prone to changes and degeneration. In spite of all theories the etiology is as yet extremely unsatisfactory, and it will only be by patient and careful study and investigation both ante- and post-mortem that the cause of the disease will be disclosed. That there is a continuous, uninterrupted and constant change in the blood is well

known, but we are still in the dark as to the reason for these changes.

Morbid Anatomy.—There is pallor of the entire surface, also the lemon-green tint in the skin. Sometimes, and usually, there is extreme emaciation; at other times, but comparatively little loss of the subcutaneous fat; the former condition being due, I believe, to the long duration of the disease, while the latter occurs in cases running a rapid course. The liver and spleen are enlarged, the heart muscles of a pale color, lungs normal and stomach normal, excepting perhaps a slight fatty degenerative change Other lesions have been described, but none of them are constant, such as changes in the sympathetic ganglion (Queckett) and sclerosis of the posterior columns of the cord (Lichtheim).

Symptoms.—An individual who has apparently been in perfect health gradually develops symptoms which seem at first to be those of a simple anemia. The onset of pernicious anemia is sometimes sudden but more frequently very gradual, and the patient is often unable to give the exact time of the beginning of his illness. The skin slowly becomes pale, gradually assuming the lemon-green tint characteristic of the disease, and is most marked at first on the face, after slowly extending over the entire surface of the body. There is a very perceptible weakness, and marked dyspnea on exertion due to the heart's action being very rapid. Vertigo and headache and ringing in the ears are often though not always present. Numbness of fingers and toes is one of the first indications. The organs of digestion gradually become disturbed, there is enlargement and engorgement of both the liver and spleen, edema of the extremities and, toward the end of the disease, as a rule, extreme emaciation. The finale is described as follows by Addison: "The debility becomes extreme, the patient can no longer rise from bed, the mind occasionally wanders; he falls into a half-torpid and prostrate state and at length expires; nevertheless and to the very last and after a sickness of several months' duration, the bulkiness of the general frame and the amount of obesity sometimes present a most striking contrast to the weakness and exhaustion observable in every other respect."

The Blood.—In the blood we must look for a certain confirmation of the diagnosis of pernicious anemia. Oligocythemia is always present as a principal feature and is as a rule very extreme. The relation between the percentage of hemoglobin and number of red corpuscles is disproportionate, the corpuscles being greatly decreased in number, while the hemoglobin remains comparatively stationary. The red corpuscles fall to about one to two million per cmm., and often lower, while the hemoglobin ranges from 18 to 40 per cent. A fresh blood slide shows numerous macrocytes. These are a constant feature of the disease and it is possible that in cases where there is a high percentage of hemoglobin it is due to the excessive number of the large red corpuscles. In addition to these are found numerous microcytes or dwarfed red corpuscles and also those having irregular form, *viz.*, poikilocytes. Ehrlich has shown that two varieties are constantly present: (1) Normoblasts about the size of an ordinary red corpuscle, containing a nucleus which stains deeply and is situated eccentrically in the cell; (2) very large forms or megoblasts with large faintly stained nuclei. There are, as a rule, but comparatively slight changes in the leucocytes.

In the early stages there is marked dyspnea which increases as the disease progresses, and is due probably to the inability of the blood to carry oxygen. The pulse is small and rapid; murmurs are heard in the cardiac region. Hemorrhages into the skin and mucous membranes occur occasionally. The lips and tongue are pale and there is nausea and vomiting of more or less frequency and severity. Constipation is usually extreme and requires enemata. The urine shows no important changes. The specific gravity is low and the urea and uric acid somewhat increased.

Diagnosis.—The points on which to base a diagnosis are as follows, and in every suspected case include an examination of the blood. (1) Greenish-yellow tint of the skin. (2) Dyspnea and rapid pulse without pulmonary symptoms and a proportionate rise of temperature. (3) The intense oligocythemia. (4) The presence of macrocytes and microcytes. (5) The steady and uninterrupted progress of the disease toward a fatal termination and the inefficiency of treatment.

Prognosis.—This is always unfavorable. The course of the disease is steadily toward a fatal ending. Cases have been reported to be cured, but I am inclined to believe they are cases which have merely had an intermission and have then disappeared from the attendant's observation, or else there has been an error in diagnosis. My own opinion is that cases of true pernicious anemia do not recover.

Treatment.—Arsenic is the only drug which seems to have a beneficial effect in these cases, and then, although it does, it is only slight and not permanent and only temporarily checks the progress of the disease. Fowler's solution in increasing doses to the tolerance of the individual; arsenious acid used in the same manner is the best form of the drug for these cases. Complete rest in bed; light and nutritious diet; light massage for insomnia; digitalin and strychnine for weak heart's action; oxygen inhalations for the dyspnea. Bone-marrow is sometimes of temporary benefit, and in using this latter I think the preferable way to give it is to spread a certain quantity of marrow, freshly scraped from bones, on a thin slice of toast. I believe this to be better than the preparations of marrow found on the market. Transfusion of blood has been tried

but, like all other forms of treatment, is of only temporary benefit.

Fortunately cases of pernicious anemia are rare. A case which came under my observation during the summer of 1899 was of twofold interest, first, because my patient was an intimate friend and, secondly, because it was the first case I had ever seen. The history is as follows: G. K., aged forty-nine years, American, medium height and weight. Latter part of June, 1899, came to my office complaining of general malaise, temperature 99.5° F.; pulse 100; on walking or making any exertion the latter increased to 140 or 150; appetite poor, bowels irregular; skin on face showed slight change in color resembling that produced by jaundice. As he had had one or two such attacks about a year previously, although not so severe, I advised him to give up business and take a complete rest in the country, together with tonics and a nourishing diet. I saw him again at the summer resort where he was staying about one week later. He had gained about one and a half pounds in weight, but his general appearance and condition were worse than when he left home; the slightest exertion caused palpitation and extreme dyspnea. The discoloration of the skin had assumed more of a greenish tinge and was extending over the shoulders and arms. The appetite was poor; bowels torpid and liver somewhat enlarged. He also had slight hemorrhage from the rectum. I advised his return to Buffalo where he came during the first part of July.

I was now convinced I had an extremely serious case to deal with and was undecided as to whether it was a malignant growth, Addison's disease, or pernicious anemia.

The patient attended to his business for a day or two and after this was confined to his house and to his bed the greater part of the time until his death. Before the blood examination was made he was seen in consultation by Dr. C. R. Jewett, and at that time malignant disease was eliminated and it was left to the blood examination to determine between Addison's disease and progressive pernicious anemia. The blood examination was made by Dr. H. G. Matzinger and showed 2,500,000 red corpuscles and 35 per cent. of hemoglobin. There was extreme poikilocytosis, a failure in the piling up formation of the red corpuscles and numbers of macrocytes.

This showed positively that the case was one of pernicious anemia. Perfect rest was at once directed and a plain and nutritious diet ordered together with increasing doses of arsenic beginning with grain 1/30 t. i. d., also tonics and stimulants. The bowels were kept regular by means of enemata and cathartics. Two weeks after a second examination of the blood was made showing an increase in the percentage of hemoglobin, but a decrease in the number of red corpuscles, also the same conditions of degeneration and lack of efforts at normal repair. During this period all kinds of unfavorable and uncomfortable symptoms arose; extreme hyperesthesia of the surface of the body, marked distention of the bowels from gas and consequent colic. There was loss of appetite, nausea and vomiting, obstinate constipation and insomnia. About this time my patient was seen by Drs. John Parmenter and D. W. Harrington and in addition to the treatment already instituted bone-marrow was ordered. At this period the emaciation became very marked. The diagnostic lemon-tint of the skin extended over nearly the entire body; there was constant edema of the hands and feet and all the former symptoms were greatly exaggerated.

Examination of the blood made by Dr. C. S. Jewett on the dates mentioned shows distinctly the steady progress of the disease. August 14th: Red cells 937,500, hemoglobin 37 per cent.; August 26th: red cells 765,000, hemoglobin 25 per cent.; September 10th: red cells 595,530, hemoglobin 25 per cent. From this point the progress of the disease was rapid and it was necessary to resort to the hypodermic use of morphine two or three times a day. At no time during the course of the disease were there important changes or abnormal conditions present in the urine. An examination of the blood on November 1st showed a further diminution in the number of corpuscles and in the percentage of hemoglobin. Death occurred November 14th. No post-mortem was made.

In presenting this paper the point I wish to emphasize is this: In cases of apparent chlorosis and primary anemia in which there is present the greenish tint of the skin, together with dyspnea, palpitation, and general malaise, one should not depend on symptoms for the diagnosis, but should let the blood examination decide whether one is dealing with either of these diseases or with a case of pernicious anemia.

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SOME OBSERVATIONS ON AFFECTIONS OF THE GALL-BLADDER.[1]

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That the surgery of the gall-bladder including gall-stones has received too little attention at the hands of the medical writer until recently, no one will deny. From a purely surgical standpoint the subject has never before been brought to the notice of this society. A. W. Mayo Robson[2] advances the proposition that "as soon as gall-stones give serious trouble their removal

[1] Read before the West Virginia State Medical Society, Morgantown.

[2] Robson, Diseases of the Gall-Bladder and Bile-Ducts, first ed., preface.

by operation is the most rational method of treatment. It is one that can be safely supported, since it is only from the complications, which in many cases of cholelithiasis arise sooner or later, that any danger after operation need be apprehended.

The following cases have come under my observation during the past year and a half:

Case I.—Choledochotomy; removal of one large stone by crushing; suture of the ductus communis, drainage, recovery. Gained thirty pounds in three months.

Mrs. M., Woodsfield, Ohio, aged thirty-six years, was admitted to the City Hospital, referred to me by Dr. J. R. Parry, February 1, 1899. A sister suffered with epilepsy, otherwise antecedent history good. No previous morbid personal history. She married, at the age of twenty-four, and has had three children, normal confinements, and one miscarriage. Present illness began about three years ago with what she describes as "a bilious attack," constipation, nausea, vomiting and epigastric pain. The cramps lasted several hours, but her recovery was complete apparently. Since that time she has had several attacks, each one a little more severe than the preceding one. She never noticed any icterus until she was six months pregnant with her last child, which was born eight months before her admission to the hospital. At this time she had an attack of cramp-like pain, for the most part localized under the right costal border, radiating toward the epigastrium and back under the right shoulder-blade. The icterus was slight, but the pain was severe. Since the birth of her child she has not been well, suffering with a constant soreness under the ribs on the right, has lost flesh and strength, her food did not agree with her and the appetite was poor. Her stools have had a gray appearance, and the color of her skin was sallow. The pain varied in intensity, and it often required an opiate, and when very severe she was compelled to go to bed for several days at a time, and at these times her icterus was deeper and the urine a dark brown.

On admission, the patient was poorly nourished and anemic. The skin and sclerotics were slightly icteric, and her stools were the color of lead and decidedly hard. Heart showed an anemic blowing murmur in the third left space. Urine 1018, no albumin, sugar or casts, acid in reaction, and bile pigment abundant. Blood contains 71 per cent. hemoglobin. Palpation reveals very marked tenderness over the gall-bladder, and a slight sense of resistance, but no tumor. This patient was given three weeks of preliminary treatment. She was placed on a peptonate of iron with arsenious acid after her meals. A heaping teaspoonful of the natural Carlsbad Sprudel salt in eight ounces of water a half-hour before her breakfast; in addition to this she succeeded in disposing of from four to five pints of hot distilled water daily. She was given daily a hot bath and massage treatment. Her general condition improved and she was in good condition for operation by February 21st.

Operation.—Under ether narcosis an oblique incision, about five inches in length, was made parallel to and about two inches below the free border of the ribs on the right. The incisura between the right and the anterior lobe of the liver was felt for and found, and the resistance felt on palpation before opening the abdomen was found to be a mass of dense adhesions overlying the gall-bladder. These were ligated and cut and after some blunt dissection an atrophied gall-bladder was exposed. The peritoneal cavity was walled off by large gauze compresses and the gall-bladder opened. It bled freely, was very thick, and contained about an ounce of very dark viscid bile and some granular detritus. Exploration of the interior of the gall-bladder led me to think that the lumen of the cystic duct was obliterated, but later I succeeded in passing my finger down through the cystic duct some distance, and then with the help of Fenger's probe located the offending stone well within the foramen of Winslow. The cystic duct was so contracted that it was impossible to dislodge or even map out the territory about the stone. The blunt dissection was most carefully continued outside of the bile-passages so that with strong light and good retraction the common duct was exposed and incised immediately above the stone, which had been partially crushed between the thumb and finger. Through this incision Fenger's scoop was passed and the crushed particles of a large gall-stone removed. The fragments weighed 83 grains.

With a fine needle and fine iron-dyed silk five stitches were used in closing the incised duct. A large rubber drainage-tube was inserted into the open gall-bladder and a small tube carried down to the neighborhood of the repaired duct. Some strips of sterile gauze were placed in the wound along the tubes, the gall-bladder sewed to the parietal peritoneum and aponeurosis and the wound closed. The tube was placed in a four-ounce bottle with its end immersed in an inch of twenty-per-cent. carbolic solution, and this bottle was pinned to the outer dressing. The small tube was removed in twenty-four hours, the larger one was left *in situ* for eight days, draining and syphoning large quantities of bile.

The wound healed primarily, the site of the drainage tube granulating, so that by March 26th there was not any leakage. The patient was discharged cured April 1st. In three months she gained forty pounds. She became pregnant one month after leaving the hospital, and in January of this year gave birth to a healthy boy without incident. She is now well.

Case II.—Cholecystectomy, with removal of ten large stones; choledochotomy one large stone removed. Recovery.

Mrs. J. W. H., of Marshall County, West Virginia, aged forty years, married and the mother of six children. Admitted to the City Hospital May 7, 1899, by her family physician, Dr. H. T.

Ford. There was no morbid family history. Her previous health had been good before the onset of her gall-bladder trouble. For the last eleven years she has suffered periodically with what she calls "pleurisy attacks," pain referred to the right side, and extending backward beneath the shoulder-blade, occasionally radiating upward into the right shoulder and axilla. These attacks would come as often as once in three or four months for the first six or seven years, the longest interval having been nine months, while carrying one of her children. She never coughed or expectorated, and was never jaundiced. For the past year she has suffered more than in the previous nine years. The attacks have become more frequent, so that she has been incapacitated for doing her household duties, has been obliged to resort to opiates for the relief of her pain, and has lost flesh and strength.

November 6, 1898, or about five months before admission to the hospital, she was seized with a chill, followed by a high fever and an attack of very sharp pain over the gall-bladder, radiating toward the stomach and posteriorily beneath the right scapula. This pain was not relieved entirely by a grain of morphine, but continued the following day and gradually diminished, leaving the patient much prostrated and decidedly jaundiced.

In the five months she lost over forty-five pounds and has suffered periodically with intense pain. She was never entirely free from soreness, her icterus gradually deepened, and her life was a burden to herself and a source of constant solicitude to her friends.

On admission the patient weighed 138 pounds; the skin was a deep bronze color, mucous membranes and sclerotics a decided yellow; pulse 110, afternoon temperature 100° to 101° F.; tongue furred and heavily coated; urine the color of strong coffee; microscopically negative; specific gravity 1021, acid in reaction, with a trace of albumin. Stool clay-colored and hard. Area of hepatic dulness increased, a very decided resistance beneath the ninth rib on the right and exquisite tenderness, rectus muscle rigid and abdomen somewhat distended. Patient was the picture of despair and the lines of her face showed too well her five months of intense suffering.

Operation.—April 8th, ether narcosis. An incision six inches in length was made parallel to the right costal margin. Adhesions were everywhere present. The general cavity of the peritoneum was well protected by large crash compresses. The gall-bladder was nowhere to be seen. The groove where it might be expected was well to the right so that after double ligation and division of many vascular bands the edge of the liver, yellow and rough, was identified and retracted upward with difficulty. After some little time was consumed in blunt dissection of part of the omentum and stomach-wall from the under surface of the liver, the thickened, elongated gall-bladder could be felt well embedded in the under-surface of the substance of the liver. On incision there escaped a mucopurulent and bile-stained fluid and with it ten stones were removed.

Exploration demonstrated that the gall-bladder was nothing more than a blind pouch having no communication whatever with the cystic duct, nor could one be made, as the cystic duct was found to be obliterated for about three-quarters of an inch beyond this blind sac. The gall-bladder was removed. I felt confident that the operation thus far had not removed the obstruction. Blunt dissection was carried downward with the aid of a portable incandescent lamp and Allis' blunt dissector. Palpation of the hepatico-duodenal ligament revealed a hard mass in the common duct. After the identification of the vein and artery as far as it was possible, an incision was made in what seemed to be the point of junction of the cystic and common ducts. Fenger's spoon was inserted and the stone removed. The common duct was found dilated at this point, yet the stone seemed anchored in some way, for it was removed with difficulty. A tube of moderate caliber was inserted into the incised duct and the closure of the wound was in every way similar to Case I. In less than twelve hours the bile poured out copiously, saturating the very ample dressing, binder and bed-linen. The tube was removed on the sixth day, and by the end of the third week no bile stain was observable at the sinus. Patient was discharged cured June 10th. She weighed 186 pounds in February of this year, contrasted with 138 pounds on admission to the hospital the previous May.

Case III.—Cholecystotomy; choledochotomy, removal of a friable stone, morphine habitué, cholemic secondary hemorrhage, death.

Mrs. E. S., aged thirty-eight years, married. Mother died of Bright's disease, had been operated on for floating kidney. While pregnant with her first child, a boy four years old, she suffered with the vomiting of pregnancy and three months before the birth of her baby had her first attack of biliary colic. The pain continued and was sufficient to demand the daily use of morphine. It seemed to reappear paroxysmally for more than three weeks. The hepatic colic, working in its sequelæ upon a constitution already infirm and impoverished, left behind a nervous adynamia, and it was for the relief of this condition and the soreness about the gall-passages that the morphine was unfortunately continued. The habit fastened itself upon her, although the patient vainly endeavored to fix a daily allowance, but it was always with considerable leeway for emergencies, as in almost all like cases. Her hypodermic syringe became her *vade mecum*. Constipation, early confirmed, grew to be an annoying symptom. Insomnia, interrupted by a fitful sleep precluded any real refreshing. Her stomach developed that peculiar sense of gnawing described by De Quincy, as if produced from the presence of a reptile. Her paroxysms of

pain became more and more frequent, and her icterus deepened to a bronze. It was in this condition that she was admitted to the City Hospital in December, 1899, where she undertook a treatment for her morphine habit. I saw her for the first time January 16, 1900, and found the epigastrium and region of the gall-bladder very sensitive on palpation, but no tumor could be felt. On account of the sharp attacks of hepatic colic and the profound cholemia, I advised immediate operation.

Operation.—January 17th, under ether and chloroform narcosis a transverse incision was made. The structures seemed unduly vascular. The peritoneum was very much thickened and inflamed. The liver was very much enlarged and had a fatty, mottled appearance, as though the seat of cirrhosis. Some adhesions were separated and the gall-bladder was exposed. It was distended and pale in appearance. After guarding the cavity of the peritoneum, a cholecystotomy was done, and immediately there gushed out a large quantity of milky fluid containing no bile pigment. It came from the bile-duct, for the quantity was far in excess of the gall-bladder's capacity.

Courvoisier[1] found in literature ten cases of hydrops of the biliary ducts, which were filled with a watery, colorless, or slightly mucoid fluid which did not possess any of the characteristics of bile. In these ten cases the entire system of the biliary tract was filled with a hydropic fluid of this nature. In not one of the ten cases was the obstruction due to stone, but to tumors within or outside of the common duct, or to obliteration of the duct in one case. He explains the acholia by assuming that cessation of the secretions of bile may, under certain circumstances, be caused by high pressure on the liver-cells, due to the stagnation of bile behind the obstruction. In this case and in one reported by Fenger the acholia was partial and was caused by a stone, and this phenomenon seems to be remarkable, as Fenger's case and the one under consideration are the only two known to me which have been reported.

The common duct was exposed and incised, and with the aid of the spoon several large fragments of stone were brought into view. The common duct was widely distended and there was no evidence of bile pigment in its wall. Further search and probing was rewarded by finding more of the friable fragments of the gall-stone. There was some troublesome bleeding from the surface of the liver, where an adhesion had been separated. This was promptly arrested, as well as the bleeding from all other adhesions, a tube inserted into the opening in the dilated common duct, and the gall-bladder sewed to the parietal peritoneum. Strips of gauze were passed down along the side of the tube, a large absorbent dressing applied and the patient removed from the table. Time of operation, two hours.

[1] Fenger. *Am. Jour. Med. Sci.*, Feb., 1896, p. 147.

During the first twenty-four hours following the operation a quart of pure bile escaped through the tube, and from this time on there was a most copious secretion. The pulse at the end of twenty-four hours was 104, temperature and respiration normal. A grain of morphine was given the first night to allay the pain. The nurse was instructed to give a half-grain of morphine when the occasion required, but strange as it may seem the patient did not ask for the opiate after the end of the second day.

In the two weeks preceding the operation she had suffered with two attacks of fainting while in bed. One of the attacks had followed an injection of some gold preparation which she had been taking under the direction of another physician, but whether or not they were the result of the hypodermic injections, I am not prepared to say. They were characterized by a quick, irregular heart-action, sighing respiration, and would pass off in less than an hour, leaving the patient rather prostrated for the rest of the day. Three days after the operation, January 20th, she was seized with such an attack. She lay for an hour in a cold clammy sweat with the eyes partly closed, pulse ran up to 120, temperature subnormal, and extremities cold. The wound was dressed and the strips of gauze removed, and only a very little dark blood could be seen on the bile-stained strips. Otherwise the wound looked perfectly healthy. This condition of shock was combated with dry heat and stimulation, and she reacted kindly. The supposition was that the syncopal seizure was similar to those which she had experienced prior to the operation. The stomach retained nourishment, and the bowels moved freely and much flatus was passed in response to enemata. The fecal matter contained some bile, and the urine was losing its coffee color. There was some very slight tympanitic distention, yet the vermicular contractions of the bowels could always be heard on auscultation.

January 21st and 22d, the bile continued to flow freely and the icterus seemed to be clearing. The pulse varied from 96 to 120. The skin felt natural except when she was threatened with one of the fainting spells. The area of hepatic dulness appreciably diminished, and at intervals on the 19th, 20th and 21st, she seemed well and bright and planned much for the future. She had no pain and required no morphine, yet, when one of the sinking spells came on, she presented the appearance of a patient in great shock.

Early on the morning of the 23d she was very restless, asked frequently for water and ice, and at times would vomit the clear water, which was slightly bile-stained, without much effort. Several times during the day she asked for morphine, and each time a quarter of a grain seemed to satisfy her. About three o'clock in the afternoon she was seized with one of the syncopal attacks, and while every effort was made to arouse the weary heart, she grew steadily worse and died at nine o'clock in the evening.

Autopsy.—A post-mortem examination of the abdominal contents was made. The stitches were removed and the site of the operation exposed to view. There had evidently been a progressive secondary hemorrhage, as large quantities of clotted blood were found between the diaphragm and the liver, and extending beneath the liver and posteriorly as far back as the spine, but not entering the peritoneal cavity. The wound was clean and the intestines were not even congested. There was no sign of peritonitis. The hepatic abrasion spoken of was clean and there was not any clotted blood about it. The region of the incised gall-bladder and bile-ducts in through the foramen of Winslow was not stained and it was demonstrated that no considerable bleeding had come from the immediate field of operation. For the most part it seemed to have been a general oozing; perhaps more came from the denuded surfaces where adhesions had been broken and separated, yet no one place or vessel was responsible for the large amount of blood which was found. It should be remembered that every adhesion of any size at the time of the operation received proper attention, and before closing the wound more care than usual was observed in searching for bleeding vessels.

While this patient had never presented any of the symptoms which might have placed her in the category with those of the hemorrhagic diathesis, unless it was that she flowed excessively at the time of her menstruation, this diathesis is well known in icterus gravis and is also found in the icterus resulting from gall-stones. Dr. Fenger speaks of it as a grave complication, and Courvoisier found it in fifty-eight patients, in most of whom operation was not performed and in whom the hemorrhage was severe and often fatal. He collected reports of six cases in which hemorrhage from the wound of operation in the gall-bladder had a fatal termination. "He warns us," says Fenger, "to search the history of the patient and make careful examination all over the body in order to ascertain whether or not a predisposition to hemorrhage exists, either from the mucous membrane or in the subcutaneous tissues; and in case the patient presents the symptoms to abstain from operation, which is likely to prove fatal on account of the uncontrollable hemorrhage from the wound of operation or from other organs. In some cases, however, in which no symptom of hemorrhage preexisted the operation has been followed by fatal hemorrhage, not from the operation wound, but from other portions of the body. It seems almost as if the operation brings into active existence a latent hemorrhagic condition."

Merman reports that Czerny lost seven patients out of forty-three upon whom he operated for diseases of the biliary tracts. Three of the seven deaths were caused by cholemic secondary hemorrhage, which in one case occurred from the intestines, entirely independent of the wound of operation.

Case IV.—Gall-stones; cholemia, ulceration and perforation of the common duct; no operation; septic peritonitis; death.

Dr. A. L. Hupp of Cherry Camp, West Virginia, one of the most brilliant and highly respected members our State Society has ever produced, died at his Harrison County home June 16, 1899. It was my sad privilege to be present in consultation with Dr. Louchery, the day before he died. Dr. Louchery has kindly written the following letter regarding the case:

"I was called to see Dr. Hupp May 29, 1899; he had been suffering for four or five days with spasmodic colicky pains in the region of the gall-bladder and thought he had passed about three gall-stones, and later did pass three or four small stones. He was very much jaundiced and suffered at intervals from nausea. He had administered to himself hypodermically from one-half to one grain or even one and one-half grains of morphine a day to relieve the pain. Diagnosis of impacted gall-stones was made. At times there was a remission of pain, so that we hoped he was improving. Stools were pasty, whitish and clay-colored; no appetite, tongue furrowed whitish, made yellow by vomited matter. Every day or two he appeared to relapse into a more serious and depressed condition, and finally died, suffering the most excruciating agony, on June 16, 1899. He vomited toward the last with the persistency of intestinal obstruction. There was active delirium and his condition was septic.

"The Doctor had had some four or five similar attacks, the first immediately succeeding the meeting of our State Medical Society in Wheeling in 1896. Another attack the next winter succeeding a very severe siege of typhoid fever during the summer and fall of 1893. In fact, he had been an invalid ever since the attack of typhoid fever. The treatment relied upon chiefly was pure olive oil and sulphate of soda, but they were without effect utterly. The very strange part was that so intelligent a physician could so persistently have refused the aid of the surgeon until moribund."

Case V.—Gall-stones, ulceration and perforation of the common duct; shock and septic peritonitis; no operation; death.

Mrs. S. W., aged seventy-eight years; healthy antecedents, mother of five children. Sixteen years ago she had some symptoms of obstructions of the bowels, the description of the attack answering very well that of fecal impaction. She had suffered from constipation, indigestion and colic for years, and had experienced occasionally some pain and soreness in the right hypochondrium. She had frequent attacks of vomiting throughout the winter, lasting part of a day and always attended with some pain in the right side, but she did not even speak of this to the members of her family, not wishing to annoy them. She has been very active of late years and enjoyed very good health. She was seen by her physician, Dr. E. C. Meyers, April 15th, sitting up in a chair suffering from what she called indigestion and colic. She thought little of the

attack, but confessed that it was worse than it had ever been before. The pain over the gall-bladder interfered with her breathing, and was not relieved until morphine was injected. An examination by Dr. Meyers showed some resistance under the ribs on the right side, and there was some slight distention of the bowels, nausea and vomiting. April 17th at night she was seized with very sharp pain in the epigastrium and in less than an hour exhibited symptoms of shock and collapse. Morphine and cardiac stimulation tided her through the night, but her physician made a grave prognosis, watching at her bedside through the night and feeling that her advanced age and the marked evidence of shock precluded the possibility of any surgical interference. I saw her the following morning in consultation. The patient was icteric, with a distended abdomen, temperature 103.5° F., pulse 136, small and thready, and vomiting. So great was the distention that nothing diagnostic could be made out in the right hypochondrium. It was evident that there was a peritonitis and that the patient was fast approaching a moribund condition. She died that night.

Autopsy.—A ruptured common duct was found and two friable stones loose in the peritoneal cavity near the seat of rupture. No effort had been made on the part of Nature to wall off the large quantity of seropurulent bile-stained exudate. The gall-bladder contained thirty or forty small, black, crenated stones, each about the size of a French pea and not faceted. The intestines were markedly distended and were covered with some recent catarrhal exudate.

Case VI.—Ulcerative perforation of one of the bile-ducts; symptoms of peritonitis; no operation; recovery.

James McK., aged twenty-nine years, carpenter. No morbid family history. No previous morbid personal history. About ten years ago he had an attack of indigestion about every five or six weeks which incapacitated him for a day or so. They were characterized by colicky pain in the epigastrium, radiating to the right, nausea and vomiting. No icterus. He had been living in the oil fields for the last five years where the food is not always what it should be. He had no further trouble until about a year ago, when there was some return of the old attacks. During the last ten months he had four or five rather severe attacks of pain, always localized over the stomach, lasting about a day and leaving him sore for several days. There was some icterus noticed at these times. April 24th of this year he awoke in the morning with an attack of indigestion and pain in the right side. As the day wore on the pain became more severe, and he called his physician, Dr. E. A. Hill, of Wolf's Summit, Harrison County. He continued ill all day Wednesday and in the evening about nine o'clock he was seized with violent, lancinating pain in the right side extending up into the right arm and shoulder. His pulse was rapid and his temperature was 102° F. Hypodermic injections of morphine relieved the pain, but only temporarily. He was seen by Dr. Louchery in consultation with Dr. Hill Thursday morning, April 26th, and at this time in addition to the other symptoms there was some distention of the abdomen, vomiting and constipation.

The patient was brought to Wheeling on a stretcher and admitted to the City Hospital where I saw him, with Dr. Hill, Friday morning, April 27th. At that time his pulse was 110, temperature 99.5° F. He seemed to be suffering acutely from general abdominal pain with its point of maximum tenderness over the region of the liver. The abdomen was distended and the right rectus muscle was rigid. There seemed to be an effusion or a sense of resistance over the gall-bladder. There was also noted a want of symmetry in the two sides of the chest along the axillary line and over the liver. Over this fulness there was marked tenderness on palpation. Percussion yielded a dull note high up into the axilla on the right. An occasional moist râle and a suspicion of bronchial breathing could be heard over this area. He coughed and expectorated a rusty mucopurulent sputum. The acute tenderness and extreme distention of the abdomen made a positive diagnosis entirely out of the question. His treatment consisted in the application of a pneumonia jacket, whiskey, strychnine, and peptonized milk. A high enema given at ten o'clock in the morning was not effective.

I did not feel justified in suggesting surgical interference without more light in the direction of a positive diagnosis. For there seemed to be as many indications at that time favoring beginning hepatic abscess as there were toward perforative ulceration of the gall-passages. In the evening his pulse was 140, respirations 32, temperature 102° F., and he complained of feeling chilly, but distinct rigors did not occur. Another effort at moving the bowels was rewarded by the patient passing a perfect storm of flatus and a large quantity of soft lead-colored feces. By morning the pulse was 120 and of better quality, temperature 99.5° F., and breathing less frequent. Monday morning, April 30th, the tympanitis had subsided in large measure. The pulse was 108 and the general aspect of the patient improved. Tuesday the distention had almost entirely disappeared, bowels were moving freely, pulse 90 to 96, temperature normal, and respiration 20 to the minute. The rectus muscle was still rigid, but a mass about the size of a hen's egg could be felt over the gall-bladder, which was tender on deep pressure. May 8th he sat up out of bed for the first time. His icterus began to clear up, and his convalescence was assured.

There seems to be little doubt as to the diagnosis in this case: An ulceration with leakage of one of the bile-passages, causing a local peritonitis, with a complicating pulmonary congestion —perhaps some pneumonia. I feel satisfied that had he been subjected to an operation at the

time when it seemed most needed, the day following his admission to the hospital, the case would have terminated fatally.

61 Fourteenth Street.

MEDICAL PROGRESS.

Clinical and Bacteriological Diphtheria.—Dr. Winters in the discussion on diphtheria, at the New York Academy of Medicine, said that 104 cases of diphtheria on a hospital staff was a record-breaking number. Henoch in his text-book on children's diseases says that diphtheria is not contagious for adults except under special circumstances. He distinctly states that during thirteen years and a half of his service in the children's department at Berlin, where there were constantly diphtheria patients in the wards, not a single nurse or doctor contracted the disease. Trousseau, whose experience with diphtheria was very large, says in his text-book that diphtheria is very rare in hospital servants. It is, therefore, extremely surprising to find over 100 cases occurring within a few years in the service of a hospital in Boston. The reason for this surprising morbidity, one cannot help but think, is due to the difference between clinical and bacteriological diphtheria. When bacteriological diagnosis came in the number of cases of diphtheria rose very markedly in a very short time. In the Boston City Hospital less than 1100 cases of diphtheria were admitted in four years before the days of bacteriological diagnosis. Recently there have been 1900 cases in a little less than 13 months. Physicians are counseled against the use of large doses of antitoxin. At the Willard Parker Hospital in New York observers have thought they have noticed an increase of mortality as the dosage of serum was increased. Even the most enthusiastic advocates of the serum treatment do not claim that any better results were obtained with large doses than with comparatively small ones. Although it is being insisted more and more that the question of the curative effect of antitoxin is absolutely settled, as a matter of fact there still remains reasonable doubt in this matter.

Dr. W. H. Bergh of New York said that their experience with large doses of serum at the Willard Parker Hospital had not been very favorable. The mortality was not reduced and many more cases of skin eruption occurred than after the smaller doses. Moreover, there was a marked tendency to more frequent occurrence of bronchopneumonia. It must be remembered that the lungs are emunctory organs, as well as respiratory organs. The effort to excrete some of the principles contained in the heterogeneous serum of the horse seems to lower their vital resistance. If, as in Boston, 50,000 or more cc. of serum are injected, 250 cc. of heterogeneous serum must be disposed of by the system. This involves too much labor for the emunctories of the body.

Dr. Rupp said that to the general practitioner diphtheria antitoxin has proved a great disappointment. Personally, he has given up its use except in such cases as those in which parents urged by a mistaken public opinion in the matter insist on the use of antitoxin. In one such recent case a series of the most painful complications ensued after an injection of diphtheria antitoxin.

Etiology and Treatment of Asthma.—On account of the absence of discoverable pathological lesions, sufficient to cause the well-marked symptoms of asthma, there have consequently been a large number of reasonable and fantastic theories advanced in regard to the etiology of this disease. W. A. Wells (*N. Y. Mcd. Jour.*, Oct. 13 and Oct. 20, 1900), after passing in review the several factors which are ordinarily advanced as influencing, at least, the asthmatic attacks, suggests that by reason of the spectacular paroxysmal crises which occur in asthma, provoked as they sometimes are by peculiar and apparently trivial causes and disappearing in an equally unaccountable way, there must be some well-marked psychical factor, and he is further inclined to believe that epilepsy, migraine and angina pectoris possess a number of points in common with asthma. Haig and Schlemmer have strongly urged the uric-acid causation of asthma, on account of the increase of that excretory product in the urine during the attacks. The phenomena, however, cannot be explained on a physical hasis alone, the emotional centers, no doubt, playing an important part. In considering the treatment of the paroxysms fumigations give great relief. A good formula is:

℞ Pulv. stramonii.....
Pulv. belladon. fol...aa. 25.0 (℥j)
Pulv. potassii nitrat.... 6.0 (℥j)
Pulv. opii ..... 1.0 (gr. xv)

Pyridine, a volatile coal-tar product, when employed by inhaling ten or fifteen drops put upon a handkerchief, gives almost instantaneous relief. Another recent remedy highly praised by the French is iodide of ethyl. Morphine and atropine are perhaps the most reliable drugs for this disease. An organic cause must always be looked for, several cases having been found to be induced by irritation of the vagus resulting from pressure upon it by an enlarged thyroid. More frequent and rather common causes are throat and nose lesions, and these must always be sought for. A valuable prescription which is used during the intervals of attacks is:

℞ Ammon. iodid..... 6.0 (℥j)
Ammon. bromid..... 8.0 (℥iss)
Syr. tolut..... 60.0 (℥ij)
Tinct. lobelia.....ad. 100.0 (℥iij)

Dose, one teaspoonful.

On account of the uric acid diathesis the author has used piperazine in a large number of cases

of asthma and believes it to be exceedingly effectual in warding off this affection when given in doses of one gram per day in the form of piperazine water.

Herpes Zoster and Acne Rosacea.—Herpes zoster is an acute inflammatory disease of the skin, running its course in about three weeks and characterized by severe neuralgic pains which frequently subside on the appearance of the vesicles, but may persist for some time afterward. A. Memelsdorf in a clinical lecture upon this disease and acne rosacea (*Med. Standard*, Oct., 1900) says that a central or peripheral traumatism, infiltration of a ganglion or a nerve by a neoplasm, inflammation or any other irritation in any part of the tract from the cord to the periphery of the nerve may evoke a zoster eruption. Kaposi distinguished eight varieties according to the location of the lesion. Since it is a self-limited disease, it is only necessary to treat the symptoms as they arise. Morphine hypodermically may be necessary and phenacetin internally is useful. The best local application is flexible collodion with or without morphine. This markedly alleviates the pain and frequently prevents the rupture of the vesicles, which may result in the formation of ulcers. Acne rosacea is supposed to depend largely upon the use of alcoholic stimulation, but the effect of alcohol has never been positively proven, the real cause of the disorder being probably the accompanying gastric catarrh. Exposure to excessive heat and cold may cause rosacea. In treating this condition it is important that attention must be given to any constitutional or local disturbance. The seborrhea and desquamation must be removed by green soap and water. A ten-per-cent. ointment of sulphur is then applied at bedtime, removed next morning and a soothing application (ten-per-cent. boric acid) rubbed into the face. Lassar's paste may be spread upon the face and left for fifteen minutes, when it is removed and a dusting powder added. The paste may be applied four successive nights. This causes an inflammation and desquamation of the skin, and a bland ointment may then be necessary. Scarification and massage may also be used. Heitzman recommends the following: Calcis ʒss, sublimated sulphur ʒj, water ʒx. Boil down to six ounces and filter. After the face has been thoroughly cleaned and comedones opened, this solution, in a strength of one to ten of water, is used once a day for the first week. The dilution is gradually reduced to one to five. During the day a ten-per-cent. boric acid ointment may be employed.

Lignosulfit in Tuberculosis.—Of all remedies employed in tuberculosis, those which directly reach the alveoli give the most promising results, and lignosulfit, in the opinion of R. Simon (*Therap. Monatschft.*, Oct., 1900), ranks most highly of these. It is a mixture of sulphurous acid with the aromatic ingredients of fir, dissolved to form a brown fluid. A ten-per-cent. aqueous solution is allowed to saturate the air of a room in which the patients must remain one to two hours daily. Improvement soon manifests itself by a change in the physical signs over the lungs and by a gradual disappearance of the annoying symptoms. As a valuable adjunct to the treatment, pulmonary exercises are mentioned; these are especially good when the acuteness of the attack has subsided and the patient is well on the road to recovery.

Amyloform.—For an antiseptic to be generally valuable it must possess rapid and permanent antimycotic properties; it must be easily miscible with oil and glycerine and its physical properties should permit its use as powder and as ointment. Cipriani (*Monatschft. f. prakt. Dermatolog.*, Oct. 15, 1900) is well pleased with the results he obtained with amyloform, a combination of starch with formalin, and prefers it to all similar drugs in incised abscesses, ulcers, wounds, burns and purulent otorrhea. Besides being perfectly harmless and free from any compromising odor, it remarkably hastens granulation and cicatrization.

On Typhoid Cystitis.—Despite the fact that in from 15 to 30 per cent. of all cases of typhoid fever, the specific bacilli are excreted through the urine, the occurrence of a cystitis is so rare that H. Curschmann (*Münch. med. Woch.*, Oct. 16, 1900) has seen but three cases. Cystitis is more liable to occur during the decline than during the height of the fever, and it is likely that the bacilli reach the bladder from the kidney, where they are filtered out of the blood. Clinically the subjective symptoms are remarkably slight, and a temperature elevation directly traceable to the cystitis was not observed. The urine appears similar to that in ordinary bladder inflammation, but, strange to say, is always acid in reaction when voided. Albumin is generally present, and as a rule there is but little difficulty in detecting the bacilli. The prognosis is fair, but the course is liable to be protracted. Internal drugs such as salol and uva ursi are generally all that is necessary and irrigations will be l rarely required. Some have found a specific in urotropin.

Methylene Blue in Dysentery.—The success which he obtained in gastralgia with methylene blue caused Berthier (*La Méd. moderne*, Oct. 10, 1900) to think that it might be of use in dysentery. The dominant symptoms of dysentery are strong desire to stool, frequent stools, colic, tenesmus, and an arrest of the biliary secretion due to a nervous disorder of the intestine. The writer says that methylene blue answers these indications as it is a parasiticide, aiming at the pathogenic cause of the dysentery; an analgesic, acting upon the nervous condition of the intestine manifested by the hyperexcitability of the large intestine; a cholagogue, having a very pronounced cholagogic effect in dysentery. Berthier was the first to use methylene blue in dysentery and he reports his first case in detail,

and states that he has had uniform success in a cases from the following method of treatment. The methylene blue is administered in warm injections of a liter, or of half a liter at first until the intestine becomes tolerant, containing in solution from one to two decigrams of the methylen. blue. Two to four injections are given daily. Until the patient has obtained a control sufficie to prevent accidents, four injections with two decigrams of blue are prescribed daily at hours such that the action of the drug extends over each two to four hours. Much care must be taken to favor tolerance of the injections. The patient should receive the injections as nearly as possible immediately after a stool, lying down with the reservoir a little elevated to facilitate the flow of the solution into the large intestine. After several injections the irritability of the hyperesthetic and intolerant intestine will be lessened. This result being due to topical action, the importance of repeating and prolonging the contact of the injection is understood; the patient should retain it as long as possible. There is no objection to more than four injections in twenty-four hours. Methylene blue is absorbed from the rectum very slightly. The urine becomes slightly bluish or greenish. Under the influence of the methylene blue the pains, colic, and tenesmus rapidly cease, and the desire to stool becomes less frequent. After one or two injections, or at latest on the second day, bile appears in the stools. This result appears to be due to the analgesic effect of the methylene blue. The writer thinks that the arrest of the biliary secretion in dysentery is due to a reflex action from the abnormal hyperexcitability of the large intestine. When the injections of methylene blue relieve this hyperexcitability, biliary secretion again becomes active. Methylene blue diminishes the virulence of bacteria, which are considered by some to be the cause of dysentery. It also indirectly lessens their virulence and toxicity by procuring the return of the biliary secretion, for the bile has undoubtedly an antiseptic and antitoxic action in the intestine. In those dysenteric patients who had gastric disturbance and vomiting, Berthier gave methylene blue by the mouth in doses of one to two decigrams with great success. The writer at the beginning of this treatment puts the patient on a milk diet and gradually adds eggs, meat, and rice. The patient's abdomen should be protected by flannel. Berthier believes that the simplicity of the treatment, its efficacy and the rapidity of its action, with the hasty disappearance of all symptoms, recommend methylene blue as the best treatment of dysentery.

Suppuration of the Parotid Gland.—H. P. Hamilton (*Western Med. Review*, Oct. 15, 1900) cites six cases illustrating the different pathological conditions causing suppuration of the parotid gland, discusses the pathology of each, and formulates the following conclusions: (1) Suppurations in the parotid gland may take place in any inflammatory disease. (2) Suppurations of the parotid gland are generally, if not always, due to septicemia. (3) Septicemia is not necessarily due to the so-called pyogenic germ. (4) Cases of mumps where the testicle is involved are always suffering from septicemia. (5) Nearly all patients with acute suppuration of this gland are delirious. (6) All can be relieved of this delirium in twenty-four hours by early incision. (7) Where suppuration exists in the parotid, death will probably follow if no incision be made to relieve same. (8) The incision should be made to include almost half the circumferences of the gland. (9) It is not necessary to curette more than is necessary to remove what pus comes into view, for suppuration invariably continues for several days thereafter. (10) When incision is made early the function of the gland is restored.

Dry Hot-Air Treatment in Private Practice.—R. H. Irish (*Albany Med. Annals*, Oct., 1900) gives his experience with a portable hot-air apparatus in private practice, and reports some cases which he treated successfully. In warm weather "local baths" may be given in the office, but in winter this is not advisable because of the danger of catching cold after the profuse general perspiration which always follows even the "local bath." In treating a limb or part it should be wrapped in several thicknesses of Turkish toweling, bony prominences being especially well covered. The temperature usually employed is 350° to 375° F., but it is best to begin with 250° to 275° F., as patients are usually nervous during the first treatment. The limb should be kept at the above temperature for 40 to 60 minutes. The temperature beneath the toweling around the limb is about 100° F. less than that in the oven. Massage and passive movements should be given immediately on removal from the oven of cases of stiff joints or adhesions of tendons. In other cases the part is dried with a coarse towel, rubbed with alcohol, and bandaged or wrapped in blankets for a while. The "general bath" is given by well wrapping up the patient in blankets and placing an arm or leg in the oven. Or, the patient may be placed in bed under a tent made of bed clothes into which the open end of the cylinder is introduced. Irish has found a temperature of 180° to 200° F. for one hour to be sufficient for the general bath, though it may safely be raised to 275° to 300° F., the head remaining out. After treatment the patient should be wrapped in blankets for an hour, then sponged with tepid water, dried, and rubbed with alcohol. The primary effect of this treatment is a sense of intense congestion so that the loose toweling seems a tight bandage and the limb seems intensely hot, almost burning. The skin is tense and dry, and almost scarlet. There is usually increased tension and frequency of the pulse and sometimes a throbbing headache. After fifteen minutes the congestion disappears and sweating, local and general, is profuse. The tension of the pulse becomes normal and pain is at once re-

lieved. There is almost a local anesthesia of the part treated and a feeling of well-being and drowsiness. Dryness of the mouth and intense thirst are frequent and drinking of water is allowed *ad libitum* during the bath. Sweating continues to the end of the bath, and if continued too long, at too high a temperature, or too frequently repeated, it may weaken the patient. On removal from the oven the tissues are relaxed, skin soft and moist, pain relieved, and all tenderness gone. Any swelling or edema formerly present is diminished or absent. Irish enumerates the conditions in which the hot-air treatment is indicated and the results to be expected from it in each. He does not consider hot air a "cure all," but simply a valuable adjunct to other treatment as indicated above.

Estivo-Autumnal Malaria.—Dr. Aristides Agramonte (*El Progreso Medico,* Nos. 8, 9 and 10) reviews the parasitology of paludism. He considers that besides the two varieties of the estivo-autumnal malarial parasites described by Marchiafava and Bignami, namely, the quotidian and the tertian or malignant, there exist other varieties of this parasite. Clinical observation in tropical countries shows the existence of a number of forms of very severe malarial disease and these take on types that depart considerably from the quotidian and tertian forms of the estivo-autumnal parasite thus far described. Laveran is the only authority now who considers that the various malarial parasites may be polymorphic forms of one and the same protozoan. Experience in warm countries points very clearly to the fact that the parasites of the various forms of malarial disease are distinct entities, and that they are never by any chance transformed one into the other. Dr. Agramonte has tried very hard to obtain some method of cultivating the malarial parasite outside of the human body. He now believes it impossible. He recalls the fact that Dr. Coronado of Havana claimed some years ago to have discovered a culture method for the parasite. His experiments were considered of sufficient value to deserve the encouragement of the French Orfila Prize in 1894. No one else has ever been able to confirm his results. During the autumn of last year and the spring of the present year Dr. Agramonte tried faithfully to follow the directions given by Dr. Coronado, but without success.

Absence of Saliva.—Dr. L. Quintin (*Revista Medico Dental* of Mexico, Sept., 1900) reports a case of asialism. The patient came complaining of not being able to swallow his food for want of saliva. His voice was husky and his mouth exhaled a nauseous odor. His teeth were covered by a thick coating of sordes. The patient's general health, however, seemed reasonably good except for a certain weakness, probably the result of the disinclination for food that had existed for some time. Inquiry showed that his urine was very much reduced in quantity. The patient presented some chronic eye trouble. For this it was ascertained he had been directed to use a solution of atropine. The case proved to be one of chronic atropinism. As soon as the atropine was stopped his condition began to improve, and at the end of the second week recovery was complete. The case seems a good illustration of the danger of allowing patients to have prescriptions renewed at will.

Pest Experience.—The conference on pest given by Professor Camillo Terni, Director of the Bacteriological Institute of Messina, before the Medical and Surgical Society of Rio Janeiro about the middle of the present year is reported (*Revista Medica de Sao Paulo,* Nos. 7, 8, 1900). The address contained an excellent review of the diagnosis, pathogenesis and prophylaxis of pest to date. Professor Terni concludes that the anti-pest vaccine of Haffkine provides the best conditions for the immunization of man and animals. The immunization thus acquired may last for a year, and may last even longer. The inconveniences claimed by some observers to occur after the use of this antipest vaccine are exaggerated and are not sufficient to constitute a contraindication to its employment.

"Puttee" Paralysis.—J. W. Springthorpe (*Intercolonial Med. Jour. of Australasia,* Sept. 20, 1900) reports the case of an officer who after an attack of enteric fever suffered from numbness, without actual pain, in the dorsum of both feet, followed by complete inability to raise the toes, and a partial inability to evert the feet. The right foot had recovered, but in walking the patient dropped and dragged the toes of the left foot. A great number of soldiers were similarly affected, and as the trouble seemed to be confined to those who had enteric fever, the condition was supposed to be a peripheral neuritis after enteric fever and was called "enteric feet." There was marked wasting of the tibial and peroneal muscles. The electrical reaction was normal, but weak. There was no tenderness on pressure over the nerves. The paralysis soon disappeared under faradism and massage. The trouble was confined to those muscles supplied by the peroneal nerve and its branches. This limitation of the condition suggested to the writer injury as its probable cause. It occurred to him that the puttees used by the soldiers might be the cause. The last few rounds of the puttees are fastened rather tightly directly over the head of the fibula, pressing the peroneal nerve against the bone, and the movements of the leg in marching increase this pressure. The writer thinks that this limited paralysis is due to the pressure of the puttees, and resembles "crutch paralysis." He was unable to ascertain whether this paralysis occurred only in those who had had enteric fever, but prefers to call it "puttee paralysis" rather than "enteric feet."

THERAPEUTIC HINTS.

To Relieve Vomiting.—Dr. Pepper's treatment for the vomiting of acute gastritis (*Therapist*, Oct., 1900) was one of the following prescriptions:

℞ Hydrarg. chlorid. mite 0.065 (gr. j)
Bism. subnitr..... 2.4 (gr. xxxvj)
M. Ft. Chart. xij. Sig.: Take one powder dry upon the tongue every three hours, until four or five have been taken.

℞ Acidi carbol. ..... 0.25 (gtt. iv)
Sodii bicarb. ..... 6.0 (ʒiss)
Elix. aurantii ..... 15.0 (ʒss)
Aquæ q. s. .....ad. 120.0 (ʒiv)
M. Sig.: A teaspoonful every three hours.

Stomach Pain.—To relieve pain in the stomach, especially that of hyperacidity, Van Valzah recommends the following:

℞ Codeine ..... 0.15 (gr. ¼)
Ext. belladon. ..... 0.08 (gr. ⅛)
Magnes. calcinat. ..... 2.0 (ʒss)

Chorea.—Avoidance of emotional disturbance, rest, for the most part in bed, a little chloral to induce sleep, frequent sponge-baths, gentle massage, and pleasant, quiet diversion will often work great improvement in a few days. The diet should be easily assimilated, nutritious, and contain plenty of fat in the form of cream and butter. Choreics are prone to crave indigestible articles. Tonics, especially iron, are indicated; arsenic is useful, but is harmful and rarely efficacious when pushed to its limit of toleration. Sometimes, however, a short vigorous course of arsenic acts favorably, beginning with a single drop and increasing one drop at a dose up to 10 or 15 drops three times a day for a child of seven years. In the severe cases absolute rest in bed, or in a padded corner on the floor, the free use of chloral or even morphine, hot baths and cold packs and feeding by nasal or rectal tube may be required. Strychnine helps to sustain the heart. Sulphonal, trional, exalgin, and antipyrin have given help in some cases. In the chorea of pregnancy it is not necessary to terminate gestation unless the motor storm is violent, the mental features pronounced, or the physical state low.—*Church and Peterson.*

Ichthyol in Acne.—As an external agent, writes Geo. T. Elliot, ichthyol in watery solution, 5 to 50 per cent., is most valuable. It is of special benefit in cases with much pustulation, and in full strength, or in a fifty-per-cent. dilution, it has commonly served the purpose of aborting a beginning lesion. In those cases of acne in which, from time to time, one or two papules begin to develop, ichthyol is a valuable agent in cutting short the career of these fresh lesions.—*Reference Handbook of the Medical Sciences, Vol. I.*

Purpura.—Simple purpura demands arsenic, first in moderate doses, then increased until beginning toxic effects. Iron perchloride, grams 2.0-4.0 (ʒss-j) daily, and if there is anemia, the inhalation of oxygen will promote hematosis. The disease requires fresh air in abundance and a generous diet. In peliosis rheumatica, in addition to the above measures, the salicylates may influence the joint affections. In purpura hemorrhagica much nourishment, by supporting the patient's power, is of the greatest service. Internally turpentine, acetate of lead, and dilute sulphuric acid are recommended, and the following:

℞ Fl. ext. ergotæ.....
Tinct. ferri chlorid.....aa 60.0 (ʒij)
Three to ten drops in water, three times a day, has proven useful in the author's cases. The management of secondary purpura is that of the diseases and conditions which it accompanies.—*J. M. Anders in "Practice of Medicine."*

Acupuncture in Lumbago.—In lumbago and similar myalgias, Sir James Grant inserts 12 or 14 small (No. 8) fine needles into the muscle through the skin for about one-half to three-quarters of an inch. He places them about the same distance apart, and leaves them in for one or two minutes. Although before puncture the painful muscles may be hard and tense, they soon relax and become soft, pliable, and painless. The patients, although previously disabled on account of the pain, can walk about freely when the needles are removed. After their removal the skin is sponged, and friction applied with a rough towel.—*Montreal Medical Journal.*

Mitral Stenosis.—When from neglect of precautions, from overtaxing the strength, from depressing emotions, or from the advance of the disease, decided symptoms of right ventricle failure supervene, such as great weakness, cough, dyspnea, with evidence of venous stasis in swollen jugulars and enlarged liver and dropsy, then use smart purgation by calomel or blue pill and colocynth, followed, if necessary, by salines. If the symptoms are urgent, venesection is of value; in certain cases no other treatment will take its place and avail to avert a speedy fatal termination. The indications are not a full, bounding pulse, but a small, weak, irregular pulse, many of the beats being scarcely perceptible. The heart will be beating violently, the apex beat almost imperceptible, epigastric pulsation marked, the liver enlarged, perhaps pulsating, and the jugulars full and pulsating. The contrast between the powerful right ventricle impulse and the small, weak pulse is very striking, and is one of the most important indications for venesection. This, with relief of the portal circulation by purgation, prepares the way for digitalis and like remedies, which without these measures afford no relief, and may indeed do harm. Digitalis should never be given for long at a time and its effect should be carefully watched.—*Sir W. H. Broadbent.*

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, NOVEMBER 17, 1900.

THE PLAGUE SITUATION AT SAN FRANCISCO.

The Medical News has commented from time to time on the fact of the presence of the Plague at San Francisco. Its persistence there calls for more active measures on the part of the local health authorities.

For the past eight or nine months at least plague has been present in that city, the secular and medical press to the contrary, and it would seem that had an energetic program been carried out, such as was done for the city of Glasgow, we would not have the uncomfortable situation outlined by Surgeon J. J. Kinyoun in the last Public Health Report, published in another column of this week's issue of the Medical News.

It has been steadfastly denied in some quarters that Plague has been present in the city, and the prophylactic measures, at one time adopted by the city health department, have ceased on the ground of lack of evidence and the difficulty in coping with the peculiar conditions prevalent in Chinatown.

The present outlook, according to Dr. Kinyoun, is that a more extensive outbreak is to be expected, and, if this is true, it is time that the health department of the city of San Francisco and the State of California should make more decided efforts at effectual sanitation.

POLYNEURITIS OF MALARIAL ORIGIN.

Most infections are primarily local, although they may extend by continuity or contiguity of structure and become widely or even generally disseminated through the blood-vessels or the lymphatics. The local disturbances result in part from the presence of the causative agents as foreign bodies, and in part from the biochemical reactions that take place between them and the cellular elements, while the constitutional disturbances, such as fever, headache, delirium, coma, are due to the absorption into the circulation of the toxic products resulting from the vital activity of the invading organism. These latter effects are generally expended upon the parenchymatous elements of the various viscera, and give rise to diverse aberrations of function, which sometimes will be found to be dependent upon alterations in structure, while at other times no lesion can be discovered with our present means of investigation.

The nervous system appears to be especially susceptible to influences of the kind under consideration, and during the last decade much has been added to our knowledge of the cerebral, spinal, and neural complications of the infectious diseases, and of the readiness with which the brain, cord, and peripheral nerves respond to toxic influences apart from infectious processes. Some of these poisonous substances appear to have a certain degree of selective affinity and to exert specific effects. Thus, the diphtheria toxin seems to attack by preference the palatal and other muscles and to cause paralysis; the tetanus toxin, to attack the motor apparatus and cause spasm; while all, in common, give rise to fever.

These reflections are applicable not alone to infections of vegetable origin, but likewise to those of animal origin, as, for instance, malarial fever and amebic dysentery, or of metabolic origin, as, for instance, the autointoxications, such as diabetes. In the malarial infections the plasmodia attack the red blood-cells, which they disorganize, and thus they induce anemia; in the spleen, in which they lodge, they give rise to hyperplasia; and the toxic products of their biological activity, it has been found, are capable of causing inflammation of nerves and presumably also of other parts of the nervous system.

The occurrence of peripheral neuritis as a complication of malarial fever has been reported from French, English, and American sources, and a case of more than ordinary interest is recorded by Baumstark (*Berliner klinische Woch-*

enschrift, 1900, No. 37, p. 815). The patient was a young man previously healthy, without a history of alcoholism or infectious diseases, in whom following an attack of malarial fever in the tropics, rapidly progressive paralysis developed in the lower extremities, with paresis in the upper, difficulty in swallowing, in speech and in the movements of the diaphragm, involuntary choreiform movements, and ataxia in the remaining voluntary movements of the upper extremities, abolition of the reflexes, especially the knee-jerks, derangement of sensibility, pain and tenderness in the muscles and the nerve-trunks, flaccid atrophy of the muscles, transitory incontinence of urine, quantitative and qualitative electrical changes, diaphoresis, and enlargement of the spleen.

There was no doubt of the existence of multiple peripheral neuritis, for which, in the absence of other etiologic factors, malarial fever was considered responsible, although malarial parasites were not found in the blood. The history, the gradual onset and invasion, the symmetrical distribution of the palsy in all four extremities, with predominant involvement of peripheral parts, especially in the perineal distribution, the pain and tenderness in muscles and nerves and the sensory changes, all negatived the diagnosis of anterior poliomyelitis. Further, the paralysis was confined to definite peripheral nerve-areas, rather than to muscles controlled by related groups of ganglion-cells in the anterior horns of the spinal cord. As against acute ascending paralysis were the onset with weakness in both upper and lower extremities simultaneously, the rapidly progressive development of the paralysis without actual extension, the favorable termination, and the sensory and electrical changes. Ewald (*Berliner klinische Wochenschrift,* 1900, No. 38, p. 845) also has reported a case of polyneuritis, occurring in a man, thirty-one years old, who had had an attack of malarial fever in the tropics and in whom there developed epigastric pain, with girdle-sense, paresthesia, anorexia, nausea, uncertainty, and, finally, loss of gait, impairment of memory, incontinence of urine, paresis and atrophy of the lower extremities, abolition of the knee-jerks, as well as of the cutaneous and periosteal reflexes, tenderness of the calves, indistinctness of speech, mental deficiency, enlargement of the spleen, unsteadiness in standing, sluggishness in the accommodative response of the pupils. Great improvement took place under appropriate treatment.

ECHOES AND NEWS.

NEW YORK.

Dr. Emmet and the Woman's Hospital.—It is reported that Dr. Thomas Addis Emmet has resigned from the staff of the Woman's Hospital. His successor has not yet been appointed. His son, Dr. J. D. Emmet, is temporarily acting.

New York Pathological Society.—At a regular meeting of this Society, held Wednesday, November 14th, Dr. E. M. Evans showed a case of congenital displacement of the heart; Dr. N. B. Potter reported a case of ruptured spleen from malaria, and Dr. O. H. Schultze one of hemorrhagic pancreatitis with fat necrosis and cyst of the stomach; Dr. Harlow Brooks presented the organs from a case of death by ether; Dr. Geo. P. Biggs showed specimens of tuberculous endometritis and tuberculosis of the bile-ducts; Dr. L. O. Conner reported cases of duodenal ulcer of embolic origin and carcinoma of the prostate; Dr. Herter contributed some remarks on diabetic coma.

Obituary.—Dr. Nathaniel P. Rice, an army surgeon in the Civil War, died of paralysis in a private sanitarium in this city on Saturday last. He was born in Cambridge, Mass., in 1828, and was graduated from Harvard with the famous class of '49. He studied medicine at the Harvard Medical School. At the outbreak of the Civil War he enlisted with a New York volunteer regiment. Two years later he was appointed a surgeon in the regular army. In 1864-65 he was medical director in Virginia and North Carolina. For a number of years he was in the bond department of the New York Custom House.

New York Hospital Fire Alarm.—Electricians at work Tuesday, November 13th, in Superintendent Ludlow's office, on the first floor of the New York Hospital, accidentally "crossed" the wire that connects the building with the Fire Department, and which is used for alarms in case of fire. The crossing closed the circuit and sent in an alarm to the Fire Department. Engine Company No. 14 and Hook and Ladder No. 3 came rushing around and found everything peaceful; nothing was known of the alarm at the hospital, until the firemen stopped in front of the building. Then the alarm was investigated and explained. There are 188 patients in the hospital, but fortunately none of them was frightened, and there was no excitement.

Warning Against Dog Bites.—Commissioner John B. Cosby of the Board of Health made the following statement this week:

"The Department of Health desires to call the attention of physicians and others to the occurrence of a number of cases of rabies among dogs throughout the city, and would request that whenever persons are bitten by strange dogs or

stray dogs they immediately consult a physician and have their wounds cauterized, and if then there is any question as to the existence of rabies in the animal communicate at once with the Department of Health."

Dr. Cosby said that there had lately come to the notice of the department several instances in which people bitten by dogs had neglected to have the wounds cauterized. He said that on Saturday a boy was bitten by a fox hound which, when examined, was found to have rabies. This dog, Dr. Cosby said, had bitten several other dogs if what he had heard was true.

State Veterinary College Burned.—The New York State Veterinary College building, which is a part of Cornell University, was partially destroyed by fire November 13th. The fire broke out on the third story, which is used as a laboratory by the veterinary and medical students, and the third story, together with valuable apparatus, was destroyed. The building was built by New York State for the veterinary department in 1895, at a cost of $60,000. The building also contained valuable laboratory apparatus and the Roswell P. Flower Library of Veterinary Science. It was constructed of white brick and was one of the handsomest buildings on the campus. The loss is estimated at $30,000, which will be covered by insurance. The library was saved, but was badly damaged by water.

Resident Students Wanted at Craig Colony.—The Craig Colony for Epileptics, at Sonyea, Livingston Co., N. Y., wants two recent graduates in medicine to serve six months, or a year, as resident students. The position is the same as that of medical interne in a general hospital. In addition to the unsurpassed opportunity for studying epilepsy (there are now 700 cases in the Colony), special opportunities exist for studying nervous and mental diseases and acquiring experience in general medical and surgical work. The incumbent receives board, lodging and washing, but no pay. Write to the Medical Superintendent, Dr. Wm. P. Spratling, at Sonyea, Livingston Co., N. Y., if further information is wanted.

New York State Medical Society.—The ninety-fifth annual session of the Medical Society of the State of New York will be held in Albany January 29, 30, 31, 1900. The meetings of the Society have always been replete in scientific work as becomes the representative society of the medical profession of the Empire State, and it is confidently expected that this meeting will equal those which have preceded it.

This circular letter is sent to every member of the Society with the request that those who desire to read papers will communicate at once with the Chairman of the Business Committee, Dr. Frank Van Fleet, 63 East 79th Street, New York City, or with the President, Dr. A. M. Phelps, 62 East 34th Street, giving the title of the paper and such other information as the author desires.

As there will be a great many papers offered, and the time necessarily limited, it is suggested that papers be condensed as much as possible in reading, as they can be published more fully in the Transactions. Arrangements for reduced fares can be made when purchasing railroad tickets.

The Craig Colony Prize (for 1901) for Original Research in Epilepsy.—Dr. Frederick Peterson, President of the Board of Managers of the Craig Colony for Epileptics, at Sonyea, N. Y., offers a prize of $200.00 for the best original unpublished contribution to the pathology and treatment of epilepsy. Originality is the main condition. All manuscript should be submitted in English. The prize is open to universal competition. Each essay must be accompanied by a sealed envelope, containing the name and address of the author and bearing upon the outside a motto or device, which is to be inscribed also upon the essay. All papers received will be submitted to a committee, consisting of three members of the New York Neurological Society, and the award will be made upon its recommendation at the annual meeting of the Board of Managers of the Craig Colony, October 8, 1901. Manuscripts should be sent to Dr. Frederick Peterson, 4 West 50th Street, New York City, on or before September 30, 1901. The successful essay becomes the property of the Craig Colony and will be published in its annual report.

Craig Colony Prize.—The following announcement is made:

New York, October 8, 1900.

To the President of the Board of Managers, Craig Colony, Sonyea, N. Y.

Sir:—Your committee of the Craig Colony Prize for Original Research in Epilepsy for the year 1900 begs to report that it cannot recommend that the prize be awarded. This verdict is a source of especial regret, as this committee arrived at the same conclusion in regard to the prize of 1899. This year but one essay was submitted.

In view of its failures, for two successive years, to recommend the awarding of the prize, your committee feels called upon to state what, in its opinion, is necessary for an essay to be considered deserving.

By the terms governing the competition, original research is a primary requisite. Research as to the pathological anatomy, the chemistry, the symptomatology, the causation, the treatment, or the nature of epilepsy, as to the position occupied by epilepsy in regard to social economics, or, in short, anything which will advance our knowledge of the disease, is what the prize calls for. It is, of course, necessary that the facts advanced be presented in a way to convince an unbiased critic of their accuracy, and that the

conclusions drawn be justified by the facts. No essay submitted either this year or last year has attained this standard. In view of the fertility of the field, of the constantly increasing number of investigators and of the present perfected facilities of research, your committee believes that the prize having failed to attract more meritorious contributions is to be explained by its not having been sufficiently called to the attention of original workers. It would recommend, therefore, that for the ensuing year no pains be spared to have the existence of the Craig Colony Prize made known to all qualified to compete for it.

Yours respectfully,

Geo. W. Jacoby, M.D.
Pearce Bailey, M.D.
Ira Van Gieson, M.D.

Loomis Sanitarium.—At the last meeting of the Board of Managers of the Loomis Sanitarium for Consumptives at Liberty Heights, Liberty, New York, it was decided that the time has now arrived to increase the charitable work in connection with the Institution, and that the present Sanitarium should be known as the Self-Supporting Division; the new plant to be erected to be known as the Charitable Division.

Ever since this Sanitarium was started, there have been a limited number of free patients provided for, and a few have always been carried at greatly reduced rates, but the managers have not been able to meet the great demand made upon them, by people of very limited or no means, for free treatment. It is their purpose, at first, to have the Charitable Division accommodate twenty-two patients, and the rates are not to exceed $5.00 a week *per capita;* this rate will include board, lodging, and medical attendance. They also guarantee to make a certain number of these original twenty-two beds free each year, and within five years to have the whole number free. Additions to the Charitable Division will, of course, be made from time to time, and the rates charged will in no instance exceed $5.00 a week, and as many free beds will be established each year as possible. The Charitable Division will be located about half a mile distant from the Self-supporting Division, but they will be managed under a single administration.

The Medical Board held its annual meeting a few days later and heartily endorsed the action of the managers, promising them all possible support in their worthy undertaking. At this meeting speeches were made by Dr. Henry F. Walker, Dr. Daniel Stimson, Dr. H. P. Loomis, Dr. Chas. E. Quimby, Dr. Frank Miller, and Dr. J. Edward Stubbert, all of whom expressed the opinion that the enlargement of this Charitable Division was not only a worthy provision, but an immediate and urgent necessity, and they believe its growth will be even more rapid than has been that of the Self-supporting Division during the four years of its life. During that time, this Sanitarium has grown from five to twenty-one buildings and from a capacity of twelve to one hundred and twenty-five patients, and it is still growing. It seemed to be the united opinion that the method of working a Self-supporting and Charitable Division under one administration, whereby the surplus income from the one could be utilized toward the support of the other, is an ideal way of administering charity upon a solid and sound basis.

New York State Conference of Charities.—This Conference, designed to meet annually in this State, has been inaugurated for the consideration of questions of practical importance with relation to the public and the private charitable and correctional work of the State, with the hope that the Conference will be able to exert a powerful force for good in securing intelligent action upon such questions. Conferences similar in purpose have for some time been organized and carried on in many of the States, principally in the West, and those who are well informed on the subject regard them as sources of beneficent influence. All who are officially connected with public or private charitable or correctional work in New York State, or who take an active interest therein, are invited to enroll themselves as members of the Conference and to attend its sessions. There are no other tests of membership, and no membership fee is charged, the expenses of the Conference being met by voluntary contributions. The Conference meets at the Capitol in Albany Tuesday, Wednesday and Thursday, November 20, 21, 22, 1900. On the opening day addresses will be delivered by Hons. W. R. Stewart, J. H. Blessing, Bird S. Coler, William P. Letchworth and Rev. T. A. Hendrick. On Wednesday papers will be ready as follows: "Need and Value of Settlement Work," by J. B. Reynolds; "The Breaking Up of Families," by E. T. Devine; "Classification of Destitutes," by Hon. A. Goetting; "A Model Institution," by D. Delehanty; "New York's System of Caring for Destitute," by Homer Folks; "Causes of Children Becoming Charges," by Dr. W. O. Stillman. On Thursday the following papers will be read: "Duty of State to Idiotic and Feeble-Minded," by Dr. J. F. Fitzgerald; "Cooperation in Hospitals for the Insane," by Hon. P. M. Wise; "New York's Prison System," by H. G. McLaughlin, and "Houses of Refuge for Women," by Mrs. C. L. Lowell.

Free Pasteur Treatment.—President Murphy of the Health Board has announced that no new cases of hydrophobia have been recorded recently, but he is reported to have said that he is confident that the notice to the effect that the Health Department would care for all cases free of charge would bear good fruit. "Only a week or two ago," said President Murphy, "we sent out a notice to all physicians that we were prepared to treat hydrophobia cases at the Willard Parker Hospital. We have been prepared to do that for two years, but the public didn't know it.

We think the city ought to care for patients suffering with rabies and for people who have been bitten by dogs."

The notice sent by the department to physicians said that treatment for the prevention of rabies, according to the method of Pasteur, would be administered free to any person residing in Greater New York; that it would be administered on request to persons outside the city upon the payment of $50 for the virus used, and that to persons unable to pay that fee treatment might be administered without charge by direction of the Board of Health.

Wesley M. Carpenter Lecture.—This lecture was given by Dr. James Ewing, Thursday, November 15th, at the Academy of Medicine, on "Conjugation in the Asexual Cycle of the Malarial Parasite." He said: "The evidence which favors the belief in conjugation of the amœboid forms of the tertian parasite consists in the observation of several cases, showing two broods of parasites, one of which was very young, the parasites being very often twinned, and the other full-grown and invariably single. In one case the young brood of twins was found to be succeeded by a later brood, all single. By the application of Nocht's stain all stages of the union, first of the bodies, later of the two or three chromatin masses present in the conjugating parasites, were observed. Several possible objections to the theory of conjugation were considered, including the doubtful significance of multiple chromatin grains in young parasites, and the possibility that one of the twins may be destroyed and extruded, while the other goes on alone to full development. Conjugating forms are usually scarce and difficult to find except in rich infections and in initial or second paroxysms.

The speaker suggested that the tendency toward spontaneous disappearance of malarial infection in the human subject may be referable to exhaustion of the power of reproduction by conjugation and the necessary development of bisexual forms which in the human host are sterile.

The conjugating parasites were usually found to suffer in appearance. One presents the ordinary thin ring form of the young tertian organism, while the other is coarser, and may not assume the ring form, or, if it does so, the ring incloses little hemoglobin. The coarse ring appears to develop, when not conjugating, into a compact, densely-staining body with six nuclei, and resembles the flagellating body seen in shed blood which has been kept moist for 15 or 20 minutes. It probably does not flagellate in the circulating blood, but reaches the stage of subdivision of chromatin granules, and is capable of developing the microgametes, or fertilizing flagella, of the bisexual cycle, which is completed in the mosquito. The thin ring form developing singly produces a body which resembles the macrogametocyte of shed blood. Both these forms in their full development in circulating blood resemble the microgametocytes and macrogametocytes described by Bastianelli and Bignami in the mosquito stomach and also traced by them, indistinctly, in the circulating human blood. The author considered the biological significance of conjugation among related protozoa, finding abundant field for this method of reproduction in the malarial parasite. Among related protozoa reproduction by conjugation of individuals not fully differentiated into sexes serves as a method of multiplication for three or four generations, after which this method is incapable of developing new individuals, and another, bisexual, method of reproduction is rendered necessary, usually associated with a completely new phase of existence in a new host. The full significance of the process was claimed for malarial conjugation, and it was not to be regarded as a form of embryonal cohesion as described by Pfeiffer and illustrated in many gregarines.

The single and the conjugating cycles of the tertian parasite were illustrated by colored lantern slides.

Transfer of Criminal Insane.—The first transfer of insane convicts from the Matteawan State Hospital to the new hospital at Dannemora, Clinton County, was made last Wednesday, when forty-eight male patients were sent from Matteawan by rail in charge of attendants. Within a month another transfer will be made to bring the total population of the new institution up to 150, which is its present capacity.

PHILADELPHIA.

German Hospital.—The new dormitories at this hospital have been formally taken possession of by the employees. The dormitories were built because the crowded condition of the hospital rendered necessary the use of the attachés' rooms for the care of patients.

Dr. Yglesias.—Dr. Manuel S. Yglesias, Health Officer of Vera Cruz, Mexico, was recently in this city. While here he made an inspection of the State Quarantine Station at Marcus Hook in order to familiarize himself with the methods there used.

Inspection of Dairies.—Col. J. Lewis Good, Chief of the Bureau of Health, and Drs. Abbott and Stewart, bacteriologists, are making a tour of inspection of the various dairies which furnish the bulk of Philadelphia's milk supply.

Sanatorium Incorporated.—Articles of incorporation have been filed by the Pennsylvania Sanatorium Company, with a capital stock of $50,000. The object of the corporation is to treat consumptives and an institution for that purpose will be built at Clifton Heights, a suburb of this city.

An Honored Guest.—Dr. Tilmann, Professor of Surgery in the University of Greifswald, Germany, visited this city recently as the guest of Prof. W. W. Keen and operated in the latter's clinic at the Jefferson Hospital. A reception to Dr. Tilmann at the University Club was attended by the prominent surgeons of the city.

Medical Aid Association.—The Mutual Aid Association of the Philadelphia County Medical Society held its annual meeting November 12th. The Association has been in existence for twenty-two years. Aid is extended to widows and orphans of members and also to members themselves if long illness or accident render this necessary. The Association is one of the residuary legatees of the estate of the late Dr. Albert Frické.

Preliminary Education of Medical Students.—An interesting compilation of the register of new students at the University of Pennsylvania has been made with reference to previous educational institutions attended. The list shows that 71 per cent. of the medical freshmen have matriculated at some college or university. In the law department 57 per cent. are from colleges, while in the dental department only 15 per cent. are college men. The above figures are highly gratifying to the medical profession.

Philadelphia Hospital.—Dr. David Riesman reports a case of abscess of the liver in a male patient, with operation and recovery. Aspiration was made and this was afterward followed by operation. The transpleural route was chosen, no serious results occurring from the pneumothorax thus caused. Three quarts of chocolate-colored fluid, which proved to be sterile, was evacuated. Regarding the diagnosis of single abscess of the liver, great stress was laid upon the shape of the abdomen. This is a peculiar flattened-cylinder appearance which is not seen in other conditions.

Druggists' Grievances.—A few more of the druggists have paid their fines for failing to display their licenses properly, others have appealed their cases. A large number of the prosecutions have been dropped by an agreement between the State Pharmaceutical Board and the Retail Druggists' Association. The latter is to introduce a bill in the State Legislature to abolish the law requiring a registration and payment of $3.00 every three years.

A Record for Dislocations.—A young man, twenty-six years of age, was lately treated at one of the city hospitals for dislocation of the left shoulder. The patient stated that this was the thirty-eighth time the shoulder had been dislocated. The man was formerly a traveling salesman and has been treated by many of the prominent surgeons of the country. The joint is very easily dislocated, but the reduction is always difficult, ether having been given during twenty-eight of the reductions. The patient refuses operative procedure which, it is believed, would prevent future dislocations.

Newspaper and Medical Items.—It is a well-known fact that the daily papers often give glowing and distorted accounts of some case or of surgical operations. Some physicians have been strongly suspected of encouraging newspaper mention of their doings, but it is hardly necessary to state that reputable practitioners discountenance it. Dr. W. W. Keen has recently made an effort to stop all press reports of his clinics and it is to be hoped that all the surgeons of the city will organize and take a determined stand in the matter. One of the city papers has continued to print reports of impossible clinics after being courteously requested by Dr. Keen not to do so. A move in the right direction has been made and the profession should see that such demands are complied with.

CHICAGO.

Polish Hospital.—A hospital to cost $250,000 is to be erected by the Sisters of the Holy Family of Nazareth in this city. It will occupy an entire block, will be constructed of cut stone and pressed brick, will be equipped with all modern appliances and ready for occupancy some time in October, 1901.

Medical Inspection of Schools.—As a means of keeping the expenditures of the Department of Medical Inspection within the appropriation for its maintenance, the Board of Education of Chicago has ordered that the general medical inspection of the schools be discontinued for the remainder of the calendar year. In its place a new system, which will greatly curtail the expense, has been inaugurated. Ten of the original fifty inspectors will be retained and an emergency corps established in each division.

Chicago's Paris Medal in Pawn.—If Chicago can raise 600 francs ($120) it can secure a gold medal for the exhibition of the City Health Department at the Paris Exposition. The medal has come C. O. D. and is held by Columbia University. Commissioner Reynolds was notified yesterday that the gold medal award had reached New York and was held by the authorities of Columbia University pending the delivery of the money.

Freed from the Grip of Quacks.—When enough of the country papers show the good sense and backbone which is very manifest in the office of the *Brown County Herald*, published at Hiawatha, Kan., the clause in the advertising contracts of the nostrum makers which virtually compels the papers to oppose any legislation which is for the good of the community by being inimical to the nostrums will lose its power. The *Brown County Herald*, in a recent number, said:

We have at last done what we have wanted to do for many years—we have thrown out of this paper every advertisement that can be by any chance considered objectionable in any de-

gree. And hereafter we shall print no offensive advertisements. We have an idea that every advertisement is read, and this being so, we don't want any one to read or to put any faith in the cure-alls and nasty nostrums that are always conspicuous advertisements in every possible newspaper in every possible public place in America. If persons are ailing, they should not hesitate to consult a reputable physician. Another thing: From this time on we will not print advertisements of traveling quack doctors. We want clean advertising matter, or else we want none. This means a loss to us of not less than $800 a year.

We believe that the people who have glanced at —— —— offensive propositions, and at —— ——, —— ——*et al.*, including the bids of various quack doctors to cure weak and suffering men and women, will miss them in this paper with not a little pleasure. It makes no difference what ails you, don't be afraid to tell an honorable physician about it, and submit to his advice and treatment.

Beware of quack doctors.

Don't read filthy ads.

Don't buy quack medicines.

Don't have anything to do with strange doctors. They are generally disreputable, and entirely unable to do any more for you than to mercilessly take your money.—*Drug Circular.*

Testimonial Banquet to Dr. Christian Fenger.—A testimonial banquet was tendered to Dr. Christian Fenger at the Auditorium Hotel, Chicago, November 3, 1900. It was a representative gathering, there being over five hundred physicians present from all parts of the United States. The meeting was called to order by Dr. J. B. Murphy, who introduced as toastmaster Dr. Charles A. L. Reed of Cincinnati, Ohio, President of the American Medical Association. Dr. George N. Kreider of Springfield, Illinois, and Dr. William A. Evans of Chicago read letters and messages of regret from the officers of various State, County and local medical societies in the East, West, North and South. Dr. W. W. Keen of Philadelphia presented the loving-cup to Dr. Fenger. One side of the cup bore the inscription:

> "This great good man for noblest cause displays,
> What many labors taught, and many days."

On the other side is inscribed: "To Dr. Christian Fenger, on the sixtieth anniversary of his birth, from those who know and love him best—The Medical Profession." Dr. Fenger accepted the loving-cup in a brief but felicitous speech. Toasts were responded to as follows: "The Physician as a Leader of Men," by Dr. Edwin Ricketts of Cincinnati, Ohio; "The Physician in Times of Plenty," by Dr. W. H. Earles of Milwaukee, Wisconsin; "The Physician in Times of Adversity," by Dr. J. M. Mathews of Louisville, Kentucky; "The Physician as a Scientist," by Dr. N. Senn of Chicago, Illinois; "The Physician as a Good Fellow," by Dr. C. A. Wheaton of St. Paul, Minnesota; "The Physician in Times of War," by Dr. C. B. Nancrede of Ann Arbor, Michigan; "The Physician in Times of Peace," by Dr. William E. Quine of Chicago, Illinois; "The Period of Awakening and the Period of Progress," by Dr. Christian Fenger of Chicago, Illinois. Dr. G. Frank Lydston of Chicago recited in an admirable manner a humorous but eulogistic poem, written in Hoosier dialect, on Dr. Fenger. Dr. L. H. Watson of Chicago likewise paid a tribute to the illustrious guest in a poem. Dr. C. Lange of New York City and Dr. Victor C. Vaughan of Ann Arbor, Michigan, made brief speeches, in which they eulogized Dr. Fenger.

GENERAL.

Plague in Mauritius.—Fifty fresh cases of bubonic plague occurred on the Island of Mauritius last week. Thirty-four deaths have resulted from the disease.

Smallpox Epidemic in Paris.—An epidemic of smallpox has broken out in Paris, due probably to the massing of Arabs and other people from the East during the exhibition. Notices have been posted by the police warning persons who have not been vaccinated within six years to be vaccinated now. Every precaution to stamp out the disease has been taken.

Obituary.—Dr. W. M. Ansell, a prominent physician of Cleveland, Ohio, died recently at the residence of M. O. Waggoner, in Toledo. The cause of death was heart disease.

Dr. Robert B. Brown died November 13th at his home in Phillipsburg, N. J., of heart trouble, at the age of seventy-six. In the Civil War he was a sergeant in the Union Army and for several years afterward was stationed at Galveston, in charge of work for the Government. One daughter survives him.

St. Louis Medical Society of Missouri.—The program of the meeting of Saturday, November 10, 1900, of the Society included the following papers: "Report of a Case of Malignant Icterus," by Dr. T. A. Martin; "Two Recent Cases of Pelvic Surgery with a Criticism of Prevailing Methods of Drainage," by Dr. G. Wiley Broome.

Unnecessary Taxation.—The Medical News calls the attention of its readers to the following letter: At the last meeting of the Congress of American Physicians and Surgeons we were appointed a committee with full powers to urge upon the Congress of the United States the repeal of those provisions of the War Revenue Act of 1898 which lay a tax on legacies to educational, charitable and religious organizations.

A petition has been introduced into the Senate by Senator Lodge, and a copy is in the hands of the Hon. Sereno Payne, Chairman of the Committee on Ways and Means of the House.

Will you not exert your utmost influence with any members of the Congress of the United

States whom you can address personally or by letter on the subject of such appeal?

The revenues of the government are admittedly unnecessarily large and commercial interests will not be idle.

Hoping that we can count on your active interest in this matter, we remain,

Yours very truly,

Fred'k C. Shattuck.
Abraham Jacobi.
William H. Welch.

Yellow Fever in Havana.—Surgeon A. H. Glennan, Chief Quarantine Officer for the Island of Cuba, has made a report to the Treasury Department on the yellow-fever situation in Havana. He says that the number of cases decreased in the last week of October and that there were only thirteen deaths in that week. He quotes Major W. C. Gorgas, U. S. A., Chief Sanitary Officer, as saying that, notwithstanding the general distribution of the disease, infecting localities not heretofore infected, and the large number of people attacked, an epidemic condition does not exist and that such a situation in Havana is impossible. He says that from June 1st to October 19th there were 789 cases officially recorded; that the official maps of the city show that there are 857 square blocks in the city, and that of this number 525 square blocks have had no cases at all. "The acceptation of the term as it is generally understood in the United States and as applied to epidemics in our great cities," he says, "certainly show no epidemic here at the present time." In a population of 242,000 the average in Havana in October was ten new cases of yellow fever a day.

Plague at San Francisco.—Official reports show that two additional cases of the plague were confirmed on November 2d.

Yellow Fever at Natchez.—One case of yellow fever was reported from Natchez, Miss., November 6th.

Surgeon-General Sternberg's Report.—In his general remarks on the gunshot wounds of 1898 and 1899 the Surgeon-General says: Of the 4919 men injured by gunshot during the years 1898 and 1899, 586 were killed and 4333 were wounded and received into the field and other hospitals. The killed constituted 11.9 per cent. of those struck; the wounded 88.1 per cent. In other words, 1 man was killed for every 7.4 wounded. The Mauser bullet must, therefore, be regarded as less deadly than the larger missile used during the Civil War. The Medical and Surgical History of the Civil War shows the following casualties:

	Killed.	Wounded.
United States troops.....	59,860	280,040
Confederate troops.....	51,425	227,871
Total	111,285	507,911

In percentages the casualties were: Killed 17.97; wounded 82.03, or 1 man killed to every 4.56 wounded. The relative proportion of killed was therefore considerably larger during the Civil War than during our recent experiences. It is to be noted also that many of the wounds of the past two years were made by missiles of large caliber. Of those reported in 1899, 471 were specially stated as having been caused by the Remington bullet of caliber .45. It is safe to say that had the whole number of wounds received been inflicted by the smaller Mauser or Krag-Jorgensen bullet the percentage of immediately fatal wounds would have been materially lessened.

The less deadly character of the injuries inflicted by the modern bullet is manifested also when we exclude the killed and regard only those wounds which came under the care of the surgeons. Of these, during the two years, there were 4333, and 259 of the patients, or 6 per cent. of the whole number, died. The corresponding percentage from the records of the Civil War was 14.3. Table C in Part I. of the Medical Volume of the Medical and Surgical History of the War of the Rebellion shows that among the white troops of the Army there were borne on the reports of sick and wounded 230,018 gunshot wounds, of which 32,907 or 14.3 per cent. proved fatal. The marked reduction of the ratio of killed to wounded may be placed to the credit of the small caliber bullet; but the lessened mortality among the cases which came into hospital may not wholly be attributed to the humane character of the wounds inflicted by this missile. Due credit must be given to the improved surgical methods of the present day. Wounds of any region of the body may be taken in comparison and the result will always be found to show a decided lessening in the percentage of cases ending fatally among those of the past two years as compared with those of the Civil War. Take, for instance, gunshot wounds of the femur. During the Civil War surgeons in the field hospitals regarded a fractured femur as a serious menace to life, the danger from which was believed to be materially lessened by an immediate amputation. The field hospital surgical work after a battle consisted in great part of amputations, excisions and resections. Of 6576 fractures of the femur 2923 cases were treated by primary amputation, 186 by resection and the remaining 3467 by conservative or expectant measures; this conservative action being due in many cases to a want of favorable conditions for the performance of primary operations. The limb was promptly amputated in 44.4 per cent. of these gunshot fractures. On the other hand, during the past two years 82 cases of gunshot fracture of the femur were reported, 6 of which were treated by primary amputation and 2 by resection, the remaining 74 cases being treated by conservative methods, not because the conditions were not favorable for the performance of primary operations, but because of a conviction that under present methods of treatment the limb could be preserved without adding materially to the danger to life. The

limb was lost through surgical intervention in only 7.3 per cent. of the cases.

Not only limbs but lives were saved by the surgical practice of the past two years. In the 82 gunshot fractures of the femur the upper third was involved in 32, of which 5 were fatal; the middle third in 27, of which 3 were fatal; and the lower third in 23, of which 1 was fatal. The mortality varied from 4.3 per cent. of the cases in which the lower third was fractured to 15.6 per cent. of the cases in which the upper third was the site of the injury, whereas the corresponding percentages of fatal cases during the Civil War were respectively 42.8 and 49.7. The whole of the lessened mortality in these serious fractures may be credited to the protection given to the wound by the first-aid dressing and to the care exercised in the subsequent aseptic treatment of the fractured limb.

In penetrating wounds of the thorax the rate of mortality fell from 62.6 per cent. during the Civil War to 27.8 per cent. during the years 1898 and 1899. The Civil War reports show 8403 cases in which the results were determined; 5260 deaths occurred among the number. The reports for the later years, as already stated, show 198 cases of which 55 were fatal.

There were during the Civil War 3475 penetrating wounds of the abdomen in which the ultimate results were determined; 3031 of these, or 87.2 per cent. of the total, proved fatal. During the years 1898 and 1899 116 cases, 81 fatal, were recorded, the fatal cases constituting 70 per cent. of the total. Of 10 cases in which laparotomy was performed 9 were fatal.

The alteration in the percentages of mortality in fractures of the cranium is less marked than in wounds of other parts of the body. Of 4243 cases of cranial fracture during the Civil War, 2514 or 59.2 per cent. were fatal. In 1898 and 1899 68 cases were recorded with 37 deaths, the latter forming 54.4 per cent. of the whole number.

Suicides in the Army. — Surgeon-General Sternberg has prepared statistics making a comparison of cases of suicide and homicide which occurred in the army during the years of 1898 and 1899 compared with the ten years between 1888 and 1897. It shows that there were relatively fewer homicides during those two years than during the previous decade. The average number of suicides per year in an army of 27,116 for the ten years was 17. The ratio per thousand was .63 per cent. The strength of the army in 1898 is given at 147,795, the average number of suicides 38, and the percentage per thousand .26. The strength of the army in 1899 is given at 105,546, and the number of suicides at 30; ratio per thousand .28 per cent. During the ten years from 1888 to 1897, the homicides are given at 5.5 per cent., and the ratio per thousand .20 per cent. For 1898 the number of homicides at 19, and the ratio per thousand .13 per cent.; for 1899, the number of homicides at 23, and the ratio per thousand .22 per cent.

OBITUARY.

DR. HENRY D. NOYES, M.D.

New York loses by the death of Dr. Noyes one of its most noted specialists. This city can claim him as one of her own, as he was born here in 1832 and has been connected with medical work in the city ever since his graduation from the College of Physicians and Surgeons in 1855 to the time of his death, which took place at his summer residence in Mount Washington, Mass., November 12th, of pneumonia. After graduation he spent four years on the Continent, where he devoted the major portion of his post-graduate study to the eye and the ear, in which

Dr. Henry D. Noyes, M.D.

branches he has since shown such a marked proficiency.

Dr. Noyes was the type of specialist that medicine is proudest of, thorough and painstaking in all of his work, brilliantly equipped intellectually and possessed of deft operative ability. His teaching was incisive and definite and his students always carried with them some practical information after his lectures. His contributions to the literature of eye disease have been many, and his text-book on "Diseases of the Eye" has been standard for many years.

Dr. Noyes was visiting surgeon to the New York Eye and Ear Infirmary and was a member of the Academy of Medicine, its Ophthalmic Section and the American Ophthalmological Society. His local interests were with the County and State Medical Societies. He was a very busy man, but found time for a number of out-

side interests, and was frequently to be found at the Century Association, of which he was a member, at its noted gatherings. He was also a member of the Nineteenth Century Club, and the New England Society. Dr. Noyes is survived by his widow, two daughters, and one son, the latter a senior at Yale.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, November 7, 1900.

THE PLAGUE AT GLASGOW AND CARDIFF—ALL DANGER OF EXTENSION PASSED — PLAGUE AT MAURITIUS AND HONG-KONG—THE OPEN-AIR TREATMENT OF CONSUMPTION—PROGRESS OF THE MOVEMENT—CONFERENCE IN LONDON OF THE POOR-LAW AUTHORITIES TO CONSIDER THE ESTABLISHMENT OF SANATORIA—OPENING OF A SANATORIUM FOR LIVERPOOL—DEATH OF SIR HENRY ACLAND, BART., LATE REGIUS PROFESSOR OF MEDICINE AT OXFORD—HIS WORK AT OXFORD UNDER ECCLESIASTICAL OPPOSITION TO SCIENCE.

Much satisfaction is felt in Glasgow at the official announcement that 6 of the plague patients have been dismissed cured. There are now only 14 cases in hospital and no fresh ones have occurred since my last letter. In consequence of the apprehension aroused in foreign governments by the fatal case of plague at Cardiff of which I have informed you, the authorities addressed an important letter to every Consul at the port, pointing out the prompt measures taken to deal with the case, to dispose of the man's body, and to prevent the spread of the disease. It is also pointed out that the period of incubation has been passed by many days and that there is no probability of any fresh case occurring. It is thought that the man who died was infected by fleas that lived on rats which were afterward found dead in the vessel on which he sailed. The nurse who attended the man was isolated with him, and after the latter's death was kept isolated. She is now considered so far out of danger that she is nursing ordinary patients.

According to a telegram received at the Colonial Office, 33 fresh cases of plague, of which 26 were fatal, occurred at Mauritius during the week ending October 11th. The total deaths from plague were 32. For the week ending October 15th, 4 cases of plague and 4 deaths occurred in Hong-Kong.

The movement to establish sanatoria for the open-air treatment of phthisis continues to progress. For some months the Board of the large metropolitan districts of Poplar and Stepney has been considering the subject. It is of the opinion that by the proper treatment of the disease in its early stages much benefit and in some cases cure would result. After a conference with the medical officers and clerks of the Unions of the district a deputation was appointed to wait on the Government authorities—the local Government Board. The latter expressed its sympathy with the desire to provide the accommodation referred to, but objected to individual action in the matter, the question being in the Board's opinion a metropolitan rather than a local one. Adopting this suggestion, a conference of all the Poor-Law authorities in London will be held at St. Martin's Town Hall to consider the question of establishing hospitals for the open-air treatment of consumption. The great northern city of Liverpool is building a sanatorium for the open-air treatment in the forest of Delamere, 500 feet above the sea level. It has been enabled to do this early by reason of the munificence of two of its citizens, who each have given £7500 for the provision of the necessary buildings. The position is an ideal one. It is sheltered from the east winds by a ridge of hills and overlooks a richly-wooded, undulating country toward the Mersey and the still more distant Welsh hills. It will be further improved when the 3000 pine trees, the gift of another citizen, have grown up. They will serve the treble object of beautifying the site, protecting the buildings and giving the air that peculiar hygienic character which is so valued. The foundation stone was laid by Lord Derby who showed such a grasp of the subject that Sir William Banks, the distinguished Liverpool surgeon, paid him the high compliment of saying that his description of tuberculosis and his treatment was such that a professor of medicine might envy. His alliteration of "dust, dirt, and darkness" as the media in which the disease thrives was particularly happy, as was also his statement that by the New Gospel consumption had been transferred from the category of hereditary to infectious diseases and had had its true method of treatment indicated.

The death of Sir Henry Acland, Bart., late Regius Professor of Medicine in the University of Oxford, and the friend of Ruskin, removes a distinguished, highly-cultured physician from the profession. He was descended from an old Saxon family of Devonshire squires and was educated at Harrow and Christ Church, Oxford, taking the Bachelor's degree in the University in 1840. He then proceeded to study medicine in St. George's Hospital where Sir Benjamin Brodie was a surgeon. In 1843 he went to Edinburgh and studied there for a year or two under Dr. Alison. In 1844 he was awarded a gold medal for an essay on "Feigned Insanity," which was considered a valuable contribution to a subject then little known. In 1845 he was appointed to the Lee Readership in Anatomy in the University of Oxford and commenced the formation of an extensive collection of physiological specimens. In 1847 he was appointed physician to the

Radcliffe Infirmary, Oxford, a post which he held for forty years. In 1847 he was elected a Fellow of the Royal Society at the early age of thirty-two. In 1857 he was appointed Regius Professor of Anatomy in the University of Oxford. He then applied himself to the formation of the pathological collection in the museum. His work at Oxford in those days was performed in the face of great obstacles. Natural science was not only almost ignored, but regarded by many religious leaders as tending toward infidelity. The whole spirit of Oxford was classical and ecclesiastical. When it was proposed to set up a new scientific museum there was a cry of dismay and a tempest of opposition. Every vote in convocation was carried only by a narrow majority. The grant for the lighting of the court of the museum was carried, but that for the burners was lost! Describing the condition of medicine in his student days, Sir Henry Acland wrote: "Any place was thought good enough for a medical student. The neglect of him by governments was a proverb. What was the result? A surgeon of note was shown to me as the one man strong enough to carry away a body under each arm from the graveyard for the body-snatchers." Acland as a teacher exerted a wide influence on many generations of students for which, and not for any discoveries or original work, will he be remembered. He infused into his labors a moral earnestness, a dignified devotion and sincerity which were a standing influence of the best kind. One of his most serviceable pieces of work was a memoir on the visitation of cholera in Oxford in 1854. He showed that it was full of the filthiest cesspools, contaminated wells, badly constructed drains, and sewers, and that the narrow streams about the town were befouled by the drains. It was, therefore, an excellent center for an epidemic. Attacks occurred previously in 1832 and 1849, but they were regarded as visitations from God and were never investigated scientifically. His work led to great sanitary reform which afforded a lesson for the whole country. His most important publication was a volume on "National Health," written in 1871. It deals extensively with the essentials of public health as then understood. His "constitutional English serenity in danger" is illustrated by the following story told of him by John Ruskin. At the age of thirty he was wrecked in a steamer on the Dorset coast. The steamer laid wedged in the rocks all night and the dawn broke on half a mile of dangerous surf between the ship and the shore—the officers in anxious debate, the crew in confusion, the passengers in hysterics or at prayers, were all astonished and many were scandalized at the appearance of Dr. Acland from the saloon in punctilious morning dress with the announcement, "Breakfast is ready." To the impatient clamor of indignation with which his unsympathetic conduct was greeted, he replied by pointing out that no boat could go on shore, far less come from it, and that in the meantime, as most of them were wet and cold and at the best must be dragged ashore through the surf or else swim for their lives, they would be extremely prudent to begin the day as usual with breakfast. The hysterics ceased, the confusion calmed, what wits anybody had became available again, and not a life was ultimately lost. Sir Henry Acland had a long and intimate connection with the Royal Family. He was appointed a member of the Prince of Wales' suite when he visited Canada and the United States in 1860. When the Prince was at Oxford he was appointed his honorary physician.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

CHOLELITHIASIS — URETHRAL CALCULI — VESICO-VAGINAL FISTULAE—XIPHOPAGUS MONSTER—PLAGUE IN JAPAN—RAW MEAT AND TUBERCULOSIS—TRYPANOSOMES OF RATS—PERIODIC SEXUAL EXCITEMENT IN GENERAL PARALYSIS—CEREBROSPINAL FLUID IN MENINGITIS—BACILLUS TYPHOSIS AND ITS TOXINS—TUBERCULOSIS IN TUNIS—BACILLUS DIPHTHERIAE AND AGGLUTINATION—PECULIAR FORMS OF VARICELLA—TYPHOID PLEURISY—TYPHOID PULMONARY INFARCT.

Lejars at the Société de Chirurgie de Paris, October 3, 1900, in behalf of Sierra (Santiago de Chili) described the latter's method of dealing with cholelithiasis. First, a cholecystectomy is done, the necessity for which in the opinion of the speaker is not always indisputable; second, a choledochotomy is performed followed by exploration and suture of the canal and finally free drainage of the abdominal wound for forty-eight hours. The cases which the speaker had observed were all successful. The treatment of the duct appeared to secure validity of the sutures which so often part after insertion.

Michaux said that the procedure was common in his hands. Usually he first lifted up the duct to empty its septic contents into the bladder before removing the latter.

Routier added that cholecystotomy and washing is the best first step, because the bladder *in situ* is an excellent tractor for managing the duct during the exploration of it.

Schwartz claimed that more prolonged drainage than for forty-eight hours is necessary to provide against death by giving way of the sutures and consequent leakage.

Guinard in behalf of Pluyette (Marseilles) reported two cases of calculi of the urethra. The first patient, twenty years old, had developed a para-urethral stone in a diverticulum of the urethra during the past fourteen years. The second patient was forty-five years of age and suffered from an intra-urethral calculus which weighed sixteen grams and had reached considerable age.

Ricard at the meeting of October 10th described his method of cure of an obstinate case of vesicovaginal fistula, which had been subjected to several operations previously, the last being an occlusion of the vulva. This was followed by a highly annoying and painful cystitis, for the relief of which she came under his care. His first step was a wide denudation of the anterior face of the uterus, precisely as in the first stage of a vaginal hysterectomy. The uterus was then drawn far down and in this free space and with this thorough freshening of the edges the fistula was closed by suture and almost complete healing ensued. A minute fistula persisted which was easily closed at a second sitting.

Routier reviewed another case where there was too little tissue in the anterior vaginal wall for suture until the uterus was still further freed and drawn down. Cure in this case, previously considered beyond the reach of all surgery, was absolute.

Bazy condemned in unequivocal terms occlusion of the vulva and vagina in these cases.

Walther reported success by this method in an instance in which hypogastric laparotomy had failed.

Segoud recalled a patient upon whom he had done an exploratory subpubic cystotomy and discovered one of the urethral orifices in one of the margins of the vesical part of the fistula. In suturing this sinus he was most careful not to have the silk pierce the walls and form the nidus of a calculus and not to include the urethral mouth in the scar-line. A minute sinus persisted which was promptly closed after the manner described by Ricard.

Potherat contributed another case of urethral calculi. His was a phosphatic deposit about an oxalate of calcium center and found in a pocket of the canal. It was removed by external urethrotomy after having given symptoms simulating stricture for eight or ten years.

Chapot-Prevost (Rio de Janeiro) at the Académie de Médecine, October 2d, introduced one member of a xiphopagus monster subsequent to surgical separation. Both individuals were females. The other perished a few days after the interference apparently of a pleuropericarditis. In addition to the soft external parts and the bones which united the girls there was a large bridge of hepatic tissue and of pericardial sac, with a small canal connecting the two pericardial cavities. This seems to be the first case recorded where when the liver was involved the separation has not been fatal.

Vallin gave the report of Kitasato (Tokio, Japan) of two epidemics of the plague in the villages of Kobé and Osaka, comprising 69 sick and 63 deaths. The rats appear to have been the greatest single factor in the spread of the disease. The plague extended among the populace from November 18, 1899, to January 11, 1900. Up to the end of January 20,000 rats in Kobé and 15,000 rats in Osaka were found dead of the disease. The specific germ was found positively once in five examinations at Kobé and once in ten examinations at Osaka and very often many dead rats were found either in the same house or in the immediate neighborhood of the sick.

Salmon at the Société de Biologie, October 6th, rehearsed his results in his endeavor to prove the observations of Richet and Héricourt that raw meat is curative of tuberculosis among dogs. He divided his animals into three sets. To the first series he fed raw meat for a long time before the inoculation which proved fatal to all. To the second set the meat was given twenty days after the injections. Several gained in weight and survived a long time. The last series of dogs were allowed to become emaciated and cachectic before the raw meat-feeding was initiated. No effect whatever was observable among them. It is interesting to note that one animal suffering from tuberculous peritonitis was seemingly cured by the raw beef; but the autopsy revealed very numerous active young tubercles.

Bouchard said that thus far in the hands of numerous observers raw meat is of absolutely no value or of merely insignificant value, in tuberculosis among human beings. The successes reported for this method among dogs tend to show that their economy possesses a relation to raw meat which that of human beings does not.

Laveran has determined that the trypanosomes of the rat may be preserved alive for thirty to forty-five days by placing the blood containing them on ice. This fact is of value to those who have not previously found it possible to study them alive and their effects when they are injected into animals.

Fere reported the case of a man afflicted with a life-long general paralysis exhibiting a sexual excitement with the same periodicity after the first appearance of his disease.

Widal, at the meeting of October 13th, reviewed the observations of Sicard, Ravaut and himself upon the characters of the cephalorachidian fluid in tuberculous meningitis. As a rule no definite cells appear except when the meninges have been attacked by acute inflammation and then these vary in accordance with the nature of the excitant. In the tuberculous patients the fluid was at times turbid, or bloody, or so limpid as to simulate closely normal fluid. Microscopically, after centrifuging, there appeared a large number of lymphocytes, but exceptionally any polynuclear cells. On the other hand in cerebrospinal meningitis the latter cells were largely predominant. The conclusion is that possibly a diagnosis can be indicated by a microscopical examination of the fluid obtained by lumbar puncture.

Bacalogu presented a report of a series of experiments upon guinea-pigs with the bacillus typhosus. Living cultures were injected into the pericardium and after three or four days always they set up a pericarditis followed by myocar-

ditis and left-sided hemorrhagic or serous pleurisy. The same results were obtained by using inoculations of the bacilli killed by boiling. Other animals received doses of bouillon culture filtered through porcelain. No lesions were found in these. From these results he infers that the typhoid toxin resides in the bacillus and is not soluble in media as is the poison of the bacillus diphtheriæ.

Remlinger remarked upon the very pronounced rarity of all forms of tuberculosis in Tunis alike among the Europeans and the Jews, less so among the Arabs, so far as pulmonary forms go. He advanced the theory that the situation of the county, between the sea and the Sahara desert, involves a ventilation from north to south.

Bouchard attributed to unhygienic life and surroundings the greater frequency of tuberculosis of the lungs among the Arabs.

Nicolas (Lyons) submitted a note in which he stated that agglutination, at first absent, will appear among the bacilli of Loeffler after a long period of laboratory culture.

Pierre Merklen at the Société Médicale des Hopitaux, October 12th, submitted a minute of his observations of an epidemic of varicella in one family presenting peculiarities worthy of mention. The illness began with an eruption upon the trunk, so distinctly that just as soon as the vesicular lesions appeared on the face a fever was present, the vesicles of the chest and back were already drying up or actually casting off their scabs. Since the preliminary trunk eruption was almost entirely latent at its invasion and the contagiousness of the disease was precocious, the futility of any isolation precautions in the family would be at once apparent. In one of the four cases the vesicles remained citrine, there was no fever, the eruption was confined to the trunk and appeared only discretely upon the face and the extremities and desiccation and exfoliation occurred without scars. In the three other patients the vesicles of the face, hands and feet suppurated after three or four days of irregular and continued fever, dried very slowly and the crusts when cast off left behind distinct scars. One might distinguish, on the basis of these four cases, a variety of varicella with citrine vesicles, without fever and without scars and a variety with suppurating eruption, some fever and scars. Finally, it appeared that other preexisting skin lesions (eczema, excoriations of hands and feet and fleabites) contribute greatly to the abundance and character of the eruption. The causes of suppuration of the lesions are without doubt complex. All his patients were surrounded by the best conditions of hygiene, but an existing eczema certainly was a favoring factor of suppuration in the skin; so likewise the second who had an abrasion of the foot. The third, however, had an intact skin and the only reason why it became infected seems to be that a varicella once suppurating may transmit itself in that form, probably by mixed infection of the germs of varicella and of suppuration associated.

Sireday reported a case of typhoid fever in a man twenty-seven years old, the invasion and early course of which were usual until the twenty-first day when signs of involvement of the pleural cavity appeared. The needle withdrew a few drops of pus which contained numerous bacilli typhosi and a few rare pneumococci. A few days later several other punctures were made without definite result. The patient went on to complete recovery. This case deserves to be added to others of typhoid pleurisy, as described by Widal, who taught that the exudate is usually so scanty as not to warrant thoracentesis, although the physical signs may indicate quite a copious accumulation. This is due doubtless to the accompanying inflammation of the lungs which clouds the picture.

Gaillard presented the history of two typhoid cases with pulmonary infarct. The first patient was a twenty-four-year-old man who on the nineteenth day of his disease was overtaken by a sudden pain in his side, followed by a bloody expectoration but without temperature. A few days later there appeared at the base of the right lung signs of a slight pleuritic exudate, which soon absorbed, but left behind distinct adhesions. The second observation was upon a man twenty-one years old who on the twenty-first day had a similar attack with slight hemoptysis, dulness, subcrepitant râles and loss of respiratory murmur at the base of the left lung. These signs ameliorated and then pleurisy appeared with fever. Recovery followed. Exploratory puncture was negative in each of these cases, perhaps because the fluid was too thick or because it formed so thin a layer on the surface of the lung that the needle pierced the substance of that organ.

SPECIAL ARTICLE.

PLAGUE IN SAN FRANCISCO DURING OCTOBER, 1900.

San Francisco, Quarantine Station,
Angel Island, Cal., October 29, 1900.

Sir: In reply to Bureau letter of the 20th instant (C. H. W.), and in confirmation of telegram sent on the 27th, I have the honor to state that during the month of October 3 cases of plague have occurred in San Francisco among the Chinese. All cases terminated fatally. The first death occurred on October 5th, at 720½ Dupont Street. The patient was a cigar-maker, who had been working just previous to his last illness in a cigar factory on Battery Street. The history which was obtained from the acquaintances of the man was that he had been ill about four or five days before death. No clinical history of his illness could be obtained. The post-

mortem examination was limited to the removal of the enlarged femoral glands, which, on examination, both microscopically and bacteriologically, showed the plague bacillus. The bacteriologist of the city board of health submitted some of the gland tissues to me for an examination. This was examined in the laboratory at this station, with the result of confirming the diagnosis.

The second death occurred on October 10th at 767 Clay Street, in the same house whence a case of plague was removed to the city hospital, dying there on July 5th. This man had been ill for a week or more, and was treated by a white physician. The death certificate gave the cause of death "typhoid pneumonia." Dr. Kellogg informs me that on inspecting the body a mass of enlarged femoral glands was seen, which, on removal, showed evidences of acute infection. Microscopical and bacteriological examination demonstrated the cause of death to be plague.

On October 14th, at request of Dr. O'Brien, the Health Officer, I visited a case at 905 Clay Street, which was reported to present certain suspicious symptoms. This case gave a history of being ill for three and one-half days. The attack commenced with a rigor, followed by fever, giddiness, nausea, and vomiting. He was seen on the evening of the 13th by a white physician, who stated that his temperature was considerably over 100° F., pulse very rapid and weak. There was also nausea, vomiting, and slight diarrhea. On the following morning—the 14th—a considerable swelling of the glands in the femoral regions was observed. There was considerable elevation of temperature, and more prostration than existed the day previous. He then reported the matter to the health office as being probably a case of bubonic plague. The patient was seen about 5 o'clock on the same day by several physicians, *viz.*, Drs. Bulkley and O'Brien, of the health board; Dr. Bunnell, police surgeon; Dr. Ryfkogel, bacteriologist to the State board of health, Dr. Lumsden, myself, and Dr. Pillsbury. The patient presented the appearance of one profoundly ill with an acute infectious disease. His temperature was 103.5° F., pulse 140, soft and compressible. There was considerable delirium. Physical examination revealed an enlarged spleen and a mass of enlarged glands in the left femoral region. There were also several reddish spots over the chest and abdomen, having all the appearances of subcutaneous hemorrhages. Cover-slip preparations were made from the blood, and also of the fluid aspirated from the gland. Cultivations were also made from the gland and blood. Microscopic examination of the cover-slips demonstrated the presence of numerous diplobacilli, which morphologically resembled those of bubonic plague. These bacilli took on a bipolar stain with thionine, and were easily decolorized by Gram's method. The cover-slips made from the fluid removed from the gland contained countless numbers of these bacilli. In fact, it appeared more like that of a pure culture of plague than a specimen taken from the body. The patient died at 11 o'clock that night, and on the following day Dr. Kellogg, the bacteriologist, made a post-mortem examination, removing the spleen and mass of enlarged glands. These tissues on examination gave the typical appearances of plague infection.

On the following day, the 16th, colonies had developed in the tubes inoculated from the blood and gland. These were examined and found to be those of bubonic plague. Animal inoculations made from these cultures were in every way confirmatory.

The State board of health has limited its operations to simply observing what is being done in San Francisco. They have instructed their bacteriologist, Dr. Ryfkogel, to be present at all post-mortem examinations and make an independent investigation. All sanitary inspectors, who were for a time employed by the various members of the board of health at the instance of the Governor, have been discharged. Dr. Crowley, a member of the State board of health, stated to me on the 27th instant that the State board of health was of the opinion that for the time being the city board of health was able and ample to meet the requirements of the situation; that while there had been bacteriological evidence of the existence of bubonic plague, there were not sufficient clinical data to warrant any steps to be taken.

In conclusion, I would state that it is my belief that the area of infection is gradually growing wider, so that now there are only three blocks of the Chinese quarter proper in which there has not occurred, since March last, a case of plague. The conditions which will obtain in the next six months will be, in my opinion, conducive to a further outbreak. The Chinese population will, in a few weeks, be augmented by several thousand more than exists during the summer months. About 3000 Chinese return every fall from the salmon canneries of Alaska. Then at the end of the fruit-picking season, which now is rapidly drawing to a close, large numbers of Chinese who are thus engaged seek a temporary home in San Francisco during the winter months. These people to all intents and purposes are contract laborers, and are of the lowest coolie class. They live under the worst hygienic conditions imaginable. It would, therefore, not surprise me to see a number of cases of plague occurring among this class of people. I will transmit, as soon as obtainable, a map showing the infected area, as well as the number of cases which have already occurred. Respectfully,

J. J. Kinyoun,
Surgeon, U. S. M. H. S.

Public Health Reports.

Typhoid at Ithaca.—A number of cases of typhoid fever have developed in Ithaca the past week. A considerable proportion are students of Cornell University residing on the campus.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held November 1, 1900.

The President, William H. Thomson, M.D., in the Chair.

Cystitis and Bacteria.—Dr. William K. Otis read a paper on the etiology of cystitis. He said that it is now generally conceded that the cause of cystitis is some microbe. This was in fact one of the first diseases the microbic origin of which was demonstrated. Pasteur showed in 1858 that even in normal individuals the micrococcus ureæ might exist in the bladder and so alter the urine as to make it alkaline. He taught that this micro-organism might easily be introduced into the bladder from without and in 1864 suggested the sterilization of urethral instruments. In 1883 Guyon of Paris produced experimental cystitis by the injection of the micrococcus ureæ into the bladder. The microbe did not produce its pathological effect in the healthy bladder, but when congestion was brought on by tying the urethra of an animal cystitis always followed. At first this was thought to be the only microbe that caused cystitis, but soon many others were found to bear an etiological relation to the condition. Now it is known that there are some twenty microbes concerned in the causation of the disease. The most common of these is the bacterium coli commune.

Cystitis and Bacterium Coli.—The exact relation which this micro-organism bears to cystitis is as yet unknown. It is well known that it occurs normally in the human intestine. It exists under many different forms and has at various times borne a number of different names. In 50 cases of cystitis it occurred 47 times. In 25 cases of cystitis it was found 23 times. It is evidently the most important of the causative bacteria, yet it is well known that its presence alone is not sufficient to set up an inflammation of the bladder. A number of cases of bacteriuria have been reported in recent years in which, though the bacterium coli commune occurred in large numbers in cloudy, offensive urine, practically no inflammatory symptoms existed in the bladder.

Other Bacteria and Cystitis.—After the bacterium coli commune the most important microbes in cystitis are the three forms of staphylococci, especially the staphylococcus aureus, the streptococcus, a bacillus septicus that is found occasionally, the gonococcus, and the tubercle bacillus. The gonococcus does not as a rule prove to be a virulent micro-organism for the bladder. When symptoms of cystitis occur during an attack of gonorrhea it is because of secondary infection. The tubercle bacillus very seldom affects the bladder primarily.

Avenue of Infection.—The avenue by which infectious agents find their way into the bladder is not always easy to determine. The most frequent source is the urethra. They are either carried back on instruments, or they may occasionally find their way from the posterior urethra, or from a collection of pus behind a stricture. Oozing urine may prove a medium for the introduction of microbes into the bladder. When incontinence exists and the urine dribbles, drop by drop, the column of fluid is almost stationary in the urethra for some time. The bacterium coli may then find its way into the bladder, as it possesses good motility. The neighborhood of the anus and the ease with which these germs might be carried by the hand to the meatus makes this method of infection not unlikely.

Infection from the Blood.—An inflammatory process in any organ may give rise to metastases in the urinary tract. Usually the starting-point of such a metastatic condition is in the intestines. It has been proven experimentally that when a ligature is placed on the intestines of an animal, bacteria may get into the abdominal circulation and so find their way to the bladder. The bacterium coli commune is especially prone to do this. The infectious agent may come from an abscess in a neighboring organ, or may spread directly from the uterus or the rectum. It seems clear that bacteria occur not infrequently in the human circulation. They are eliminated by the kidneys and so find their way into the bladder, but usually without producing any inflammatory reaction. Some predisposition usually must exist before the bacteria can gain a foothold for their reproduction and development. The colon bacillus, especially, may find its way into the bladder without producing any cystitis. Guyon has had a patient who for thirty years has been passing the bacterium coli from his bladder, yet has not suffered from any vesical inflammation. Dr. Otis himself has had a case under observation for several years in which there is the offensive, stale odor so characteristic of the presence of the bacterium coli and in which these bacteria actually exist in very large numbers, yet there are no actual symptoms of cystitis.

Rovsing, an authority on cystitis, was so much struck by these facts that he considered the bacterium coli commune as a harmless inhabitant of the bladder, as it is in most cases of the intestines, and thinks that there is always some other micro-organism present which is the active agent in the production of the inflammatory symptoms. The luxuriant growth of the bacterium coli, he thinks, interferes with the demonstration of the presence of the other microbe. Tuberculous foci in either or both kidneys may exist for years and pour any number of tubercle bacilli into the bladder and yet no infection take place. The tuberculous process may spread from kidney to bladder by the ureter, or it may be the result of an abscess of the prostate rupturing into the bladder, or finding its way along the ducts to the urethra and thence into the bladder. The presence of a simple cystitis predisposes to

tuberculous cystitis. It is only when the vital resistance of the bladder is thus diminished that infection takes place. The presence of a foreign body, the congestion and trauma incident to retention of urine, may easily predispose to almost any form of bacterial cystitis. Guyon has shown experimentally that artificial retention is the surest method of arousing cystitis if pathogenic microbes are present. Hence there is the greatest necessity for scrupulous asepsis in the treatment of retention of urine by instruments or otherwise.

Gouty and Rheumatic Cystitis.—It was the custom to refer a good many cases of cystitis to the underlying constitutional condition that exists in gout or rheumatism. It is doubtful if they ever more than predispose the organ to infection. Cold was supposed to be another prominent factor in the etiology of cystitis. There are times when exposure to cold seems to be the reason for an exacerbation of an already existing cystitis, but it probably never causes an attack of the affection by itself. There are, of course, certain mechanical conditions, as the presence of a foreign body or certain irritants, as cantharides, turpentine and the like, which may cause vesical inflammation.

Prophylaxis.—The most important prophylactic measure is the thorough sterilization of instruments that are used in the urethra. Steel instruments, of course, can be readily and effectively cleaned by passing them through the flame of a Bunson burner. Soft rubber catheters can be absolutely sterilized by boiling. They should then be kept in a one-to-two-thousand solution of formalin or of sublimate until they are used. Silk and other catheters are not so easily cleansed. These should be washed well on the outside with warm soap-suds and on the inside by forcing a stream of suds through their caliber with a syringe. Guyon recommends dry heat and says that they can be effectually sterilized at 140° C. without producing any change in their texture. Boiling in plain water for five minutes has also been recommended. When this is done the catheters must each be wrapped separately in gauze, because if they lie in contact with one another adhesions take place during heating and the surfaces become roughened. Formalin vapor may also be used for the sterilization of these catheters and various apparatus are manufactured for this purpose. If formalin is employed the catheters should be washed out thoroughly after their exposure to the vapor, otherwise this substance will prove irritating to the urethra.

Directions to Patients.—When patients are to use the catheter themselves they should be given the most explicit directions as to the care that must be exercised in keeping the catheters aseptic. It is impossible to insist too much on this point, for, no matter how intelligent patients may be, the use of the catheter becomes in time a routine and serious neglect of precautions ensues. Even physicians become careless and do not take the necessary care in this matter. Martin's directions are the best. They may seem to the inexperienced needlessly detailed, but those who realize how serious vesical infection may prove will consider them justified by the conditions. The patient should have twice as many catheters as he needs to use in the twenty-four hours, and on alternate days his catheters should be thoroughly subjected to some assured method of sterilization. There is no use in attempting to limit the number of catheterizations. As a rule, the urine must be removed from the bladder often enough to prevent an uncomfortable collection of the fluid and also to avoid congestion. The presence of large amounts of urine so lowers the vital resistance of the bladder-walls that infection very easily takes place.

Lubricants.—A good lubricant is needed and should be in the form of some material that does not prove a ready culture medium for microorganisms. The lubricant substance should also be soluble in water, otherwise a collection of material may cling to the bladder-walls. There is at least one case on record where a large amount of vaseline was found in the bladder as the result of its frequent and abundant use for the lubrication of catheters. Sterile glycerine possesses many of the qualities of a good lubricant, but is too thin. Lubrichondrin has been recently introduced to the profession and is in many ways an ideal lubricant. It is sterile and is sold in tubes which assures its cleanliness much better than if it were in some ordinary receptacle. After the passage of a catheter the bladder should be washed out with a one-to-two-thousand formalin solution, or a dilute solution of nitrate of silver should be injected into the bladder and allowed to remain for three or four minutes. After this the bladder should be washed out. Various internal remedies which act as antiseptics in the urine are in general use and will often be found of assistance in the treatment of vesical conditions. Of these salol, methylene blue, and benzol are the best. Recently there has been introduced a new synthetic product, urotropin, which gives excellent satisfaction. In doses of seven and one-half grains given four times a day, this drug will often clear up cloudy urine that has resisted even the employment of vesical irrigation.

Predisposition Important.—In the discussion Dr. Edward L. Keyes said that bacteria are undoubtedly of importance in the production of cystitis, but some underlying condition of the system seems to be still more important in the etiology. He has frequently seen the condition known as bacteriuria, *i. e.*, hazy urine with a distinct mousy smell, accompanied by but very slight symptoms of vesical irritation. A few pus cells could be found in the urine, the haziness of it could not be thrown down by chemical reagents and the bacteria could be readily detected by culture methods. If the bacterium coli is pathogenic for cystitis it is evident that there

are conditions under which it fails completely of its effect. Not only this, but under certain circumstances, even when the bladder reacts distinctly to the irritant present, the general system does not seem to suffer and the individual remains in reasonably good health. Dr. Keyes has under observation at the present time a man whom he saw first twenty-five years ago. At that time the urine was putrid and the man was living an absolute catheter life. After a course of irrigation the condition improved; then the patient neglected himself and the conditions became worse than ever. A few years ago he saw the man again and found that he complained very little of vesical symptoms. He was still passing the catheter faithfully every day and the instrument was a sight. The catheter was all blistered and reminded one of nothing so much as of a rat-tail file. The patient employed no lubricant. The instrument was kept in a drawer in his office, or in a washstand at home, and no precautions as to cleanliness were taken. Not long ago the man was placed on urotropin and since then his urine has been perfectly clear.

Bacterial Infection.—Of late years it is becoming recognized that the mere presence of pathogenic microbes is not enough to produce disease. It is the old question of the seed and the soil. Only when the soil is capable of nourishing the plant will the seed grow. Long ago in the Good Book it was said that some seeds fell on good ground. Soil is more important than seed. When the tissues are rendered less resistant by sexual excesses, or by long sexual restraint, the incident congestion decreases the vital resistance and so makes favorable soil for the implantation of bacteria. At such times instrumentation or trauma may easily give rise to cystitis. The relation which predisposition bears to infection has been beautifully demonstrated by some experiments of Albarran. He injected into the circulation of an animal certain bacteria that had been isolated from a case of septic nephritis. These bacteria failed to produce anything but a local reaction, though some of them were found in the urine. When one of the kidneys of the animal, however, was deliberately bruised at the time of the injection, the bacteria found a lodgment in the kidney and produced a purulent condition. The uninjured kidney remained normal, though the bacteria in the circulation had also been carried to it.

Catheter Life.—At the beginning of catheter life patients are usually very sensitive to irritations of their urethra and bladder. Nature has not yet built up the protective mechanism which later so often effectually secures these patients against the effects of irritation and of infection. Even when all the details of asepsis are scrupulously put into practice, most patients will suffer from irritation and present hazy urine containing scattered leucocytes. Later many patients will be capable of standing almost anything in the way of urethral and bladder irritation.

Individual Vulnerability.—Dr. Bolton Bangs said that the occurrence of cystitis depends to a great extent on individual susceptibility. A patient of Dr. Bangs suffered so severely from cystitis that it was thought necessary to put in a retention catheter. The patient had to get up to the commode and the catheter slipped into the vessel. It was taken out by the patient himself and after simple wiping reinserted. An acute exacerbation of the cystitis resulted, but the symptoms subsided in a few days. It is not an unusual thing to find that old men who are living a catheter life carry the instrument in their hats. Yet such men often live to eighty and then do not die because of their bladder affection. The simpler the directions given to patients for the cleansing of catheters the better. Boiling constitutes the best and easiest means of sterilization. The importance of a good sterile lubricant cannot be overestimated. Dr. Bangs considers lubrichondrin the best now to be had. It is extremely important to maintain the general health of patients who are living a catheter life.

Catheter Hats.—Dr. Keyes said that it is a well-known fact that one of the prominent hatters on Broadway years ago made a special hat for old men in the bottom of which was a compartment in which a catheter could be placed.

Failure of Tolerance.—Dr. Eugene Fuller said that the cases which grow so very tolerant to catheterization are the exception and not the rule. They come as such a surprise that they were apt to be remembered. Dr. Fuller considers that cystitis is very frequently the result of a mixed infection. The gonococcus alone, for instance, very seldom produces cystitis. When some other bacterium, also pathogenic in its effect, is present in the bladder at the same time, the two may cause serious inflammatory symptoms.

Cleanliness.—Dr. A. B. Johnson insisted that certain simple precautions as to cleanliness often prove of great service in preventing the occurrence of cystitis. Patients should not only be instructed to boil the instruments they use, but should be made to wash the hands carefully and to wash off the glans penis and the meatus very thoroughly before the insertion of the instrument. In addition to these instructions they should be provided with tubes of lubrichondrin. The most important thing after instrumentation is to wash out the bladder. Utzmann of Vienna took very few precautions with his instruments, in fact always used the same sound even for successive patients without sterilization and yet never produced cystitis. He was very careful, however, to wash out the bladder thoroughly after the use of the instrument.

Irrigation of Urethra.—Dr. Valentine said that the urethra is constantly full of pathogenic germs. The danger of carrying these back into the bladder can be minimized by irrigation of the anterior urethra before the passage of the catheter into the bladder. If the irrigation is done with boric-acid solution and the urethra then

filled with an iodoform-glycerine solution, there is very little danger of setting up inflammatory reaction either in the urethra or in the bladder. The importance of clean catheters is emphasized by the recent reports of five cases of vesical calculus, the nucleus of the stone in each case being a hair that was carried in on a catheter.

Vulnerability.—Dr. Jacobi said that the question of infection depends to a great extent on the vulnerability. This may vary from time to time even in the same individual. There are times when the bacterium coli becomes pathogenic even in the intestines. Normally, however, it exists there in millions without doing any harm. Why then should it not occasionally exist in the healthy bladder without producing cystitis? This would not preclude the possibility of its producing cystitis under more favorable conditions. The opportunity for this micro-organism to find its way into the bladder by direct contact is comparatively easy in the female, from the anus into the vagina. There is no doubt that at times broncho-pneumonia is caused by the bacterium coli which finds its way into the mouth and respiratory passages from soiled fingers. Ordinarily its presence does not produce any pathological conditions, but if catarrh of the respiratory passages already exists it may easily cause further pathological developments in the respiratory tracts. The same thing is true in the gall-bladder into which bacterium coli finds its way, but proves pathogenic only when the resistive vitality of the gall-bladder is lowered or the virulence of the micro-organism itself has been increased by some enteritic condition.

In closing the discussion Dr. Otis said that at the initiation of catheter life very great precautions should be insisted on. For several days beforehand urotropin should be administered in order to make the urine aseptic and unirritating. Just before catheter life is begun the patient should even be counseled to pass a day or two in bed until he becomes accustomed to the new conditions. Gentleness in the passage of instruments and cleanliness remain the most necessary imperative precautions.

BOOK REVIEW.

An Inquiry into the Conditions relating to the Water Supply of the City of New York. By the Merchants' Association of New York. August, 1900.

It is a pleasure in this day and generation, when universal egoism threatens to stamp out ethical standards and altruistic endeavors, to find a group of citizens, who at great personal expenditure of time, energy and money, are willing to give their best efforts to the public welfare in the battle with political greed and robbery.

The present volume of 627 pages presents a complete review of the water problems of a great city and also exposes the many ramifications of the Ramapo Water Scheme.

The technical economic and engineering features of the problems involved are adequately discussed and the book is well worthy of a wide reading by financier, engineer and tax-payer. To the Merchants' Association should be accorded the thanks of the citizen and the support of the profession.

BOOKS RECEIVED.

Heart Disease in Childhood and Youth. By Dr. C. W. Chapman. Demi 8vo., 101 pages. Illustrated. The Medical Publishing Company, Limited, London. Ninety cents.

A Practical Treatise on Genito-Urinary and Venereal Diseases and Syphilis By Dr. Robert W. Taylor. Second Edition. 8vo., 722 pages. Illustrated. Lea Brothers & Co., New York and Philadelphia.

Hernia, Its Etiology, Symptoms and Treatment. By Dr. W. McAdam Eccles. 8vo., 231 pages. Illustrated. William Wood & Company, New York.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. Edited by Dr. Thomas L. Stedman. Vol. 20. Tuberculosis, Yellow Fever and Miscellaneous. 8vo., 906 pages. Illustrated. William Wood & Company, New York.

An American Text-Book of Physiology. Edited by Dr. W. H. Howell. Second Edition. Vol. I. 8vo., 598 pages. Illustrated. W. B. Saunders & Co., Philadelphia. $3.00.

Physical Diagnosis of Diseases of the Chest. By Dr. Richard C. Cabot. 8vo, 310 pages. Illustrated. William Wood & Company.

A Reference Handbook of the Medical Sciences. By Various Writers. New Edition. Quarto, 800 pages. Illustrated. Edited by Dr. Albert H. Buck. Vol. I. Aac-Bla. William Wood & Company.

Saunders' Medical Formulary. By Dr. William M. Powell. Sixth Edition. W. B. Saunders & Company, Philadelphia. $2.00

Essentials of Histology. By Dr. Louis Leroy. Demi 8vo, 231 pages. Illustrated. Saunders' Question-Compends. No. 25. W. B. Saunders & Company, Philadelphia and London. $1.00.

A Text-Book of Pathology. By Dr. Alfred Stengel. 8vo, 873 pages. Illustrated. Third Edition, Revised. W. B. Saunders & Company, Philadelphia and London. $5.00.

The American Illustrated Medical Dictionary. By Dr. W. A. Newman Dorland. 8vo, 770 pages. Illustrated. W. B. Saunders & Company, Philadelphia and London. $4.50.

Modern Medicine. By Drs. J. L. Salinger and F. J. Kaltever. 8vo, 801 pages. Illustrated. W. B. Saunders & Company, Philadelphia and London. $4.00.

Modern Surgery, General and Operative. By Dr. John Chalmers Da Costa. Third Edition. 8vo, 1160 pages. Illustrated. W. B. Saunders & Company, Philadelphia and London. $5.00.

A Text-Book of the Practice of Medicine. By Dr. James M. Anders. Fourth Edition. 8vo, 1202 pages. Illustrated. W. B. Saunders & Company, Philadelphia and London. $5.50.

Eye, Ear, Nose and Throat. A Manual for Students and Practitioners. By Drs. W. L. Ballenger and A. G. Wippern. Lea's Series of Pocket Text-Books. 8vo, 525 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York. $2.00.

Transactions of the American Ophthalmological Society. Thirty-Sixth Annual Meeting. Washington, D.C., 1900. 8vo, 200 pages. Illustrated. Hartford.

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ORIGINAL ARTICLES.

ŒDEMA BULLOSUM VESICÆ.

BY FREDERIC BIERHOFF, M.D.,
OF NEW YORK.

Of the forms of edema which affect the human bladder that which Kolischer ("Erkrankungen der weiblichen Harnröhre und Blase") describes as "edema bullosum" is perhaps the most characteristic, and certainly the most interesting.

To quote his description of this condition, which is classic in its exactness: "Circumscribed portions of the vesical mucous membrane appear to be covered with clear vesicles varying in size from a small seed to a pea; between these frequently closely-crowded vesicles one sees white particles floating, which are adherent at one extremity to the bladder-wall and are, in all probability, the remains of the membrane of vesicles which have already ruptured. In especially exquisite cases, this formation of vesicles is, with regard to their size and number, an exceedingly large one, so that one inclines to the belief that one sees a part of a hydatid mole." He also states that in each case in which he saw this form of edema, it occurred at a part of the bladder-wall to which an adjacent inflammatory tumor had become attached or when a pus-tumor had broken through into the bladder, leaving a fistulous communication, however, so that the purulent contents of the tumor remained under pressure. The finest forms, he states, occur where an exudate exists between the uterus and bladder, and adds that he does not hesitate to designate the occurrence of this phenomenon as an indication of the inflammatory nature of a tumor adjoining the bladder.

With this statement my experiences with this condition lead me to agree fully, as also with the further one, that he has only seen it occur in cases of carcinoma uteri when inflammatory changes in an ulcerating carcinoma of the cervix have led to infiltrations in the region where the cervix and bladder are connected. But that, in such cases, the bullæ occur only as isolated formations, I cannot accept as true for all cases, for in some of the cases of carcinoma which I have examined the picture was exquisite with regard to the extent and characteristic development of the condition. In fact, in the later stages of carcinoma of the uterus and parametrium, where the process had extended to and involved the bladder-wall, the picture was clearer and the process more extensive than with any of the other causes.

Since the condition is due to the lifting up of the superficial epithelium of the bladder by exuded serum, it may be caused by any condition, inflammatory or neoplastic, which obstructs the circulation in any part of the bladder-wall. Hence, the nearer these causative processes approach the mucous surface of the bladder, the more pronounced will be the edematous condition. Casper ("Handbuch der Cystoskopie") mentions having seen edema bullosum in a number of females; and also in males, especially where tumors of the prostate were present, which protruded high up into the bladder. In such cases he says, it is found on the floor of the bladder. In one case of prevesical abscess in the male he also found it on the upper wall. He also claims to have seen this phenomenon in the neighborhood of vesical tumors, surrounding these with a wreath of vesicles. He concludes that its seat is at that part of the bladder-wall where the interference with the circulation is the most marked, and that it is never to be found in a bladder which is entirely normal. But he also remarks upon the difficulty which at times arises in the attempt to differentiate between edema bullosum and fimbriated tumor-formations.

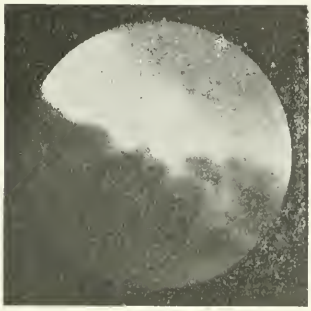
One of these conditions, a hypertrophic form of cystitis, described by me (MEDICAL NEWS, May 26, 1900) under the designation "cystitis papillomatosa," or villosa, at times closely resembles edema bullosum. In differentiating between the two, or between edema bullosum and the minute papillomata which occur at, or near the inner sphincteral margin, we must bear in mind that while in edema bullosum we have to deal with vesicles filled with clear, transparent serum, in cystitis papillomatosa we find an inflamed surface covered with minute papillæ, which, on closer examination, are found each to possess a vascular loop. Similarly, also, with the minute, discrete papillomata at the sphincter. These last-mentioned are found at times on or just behind the margins of the sphincter, and are, when small, perfectly transparent, excepting for a beautifully clearly-defined vascular loop. When larger they lose partially or completely their transparency, but the vascular loop may almost always be distinguished, if not throughout the entire growth, then near the free end at least, where the main growth at times becomes somewhat fimbriated.

They may give rise to dysuria of a varying degree of severity, and may occur as an accompaniment of mild, catarrhal inflammations about, or at the sphincter, or without any discoverable inflammatory accompaniment. Lastly, whereas the bullæ of the edematous process tend to assume a hemispherical or lenticular form, the pa-

pillomatous processes take the form of slender, long tongues, with rounded, or even clubbed ends.

In all, fifteen cases of typical edema bullosum have come under my observation. They were as follows: Carcinoma (affecting uterus and parametrium), 4; catarrhal cystitis colli, 4; suppurative cystitis colli, 1; gonorrheal cystitis colli, 1; ulcerations, superficial, following cauterization with cystoscope, 2; pyosalpinx with parametritic exudate, 1; cystocele (without discoverable inflammatory changes in the vesical wall), 1; urethritis (involving, also, the vesical sphincter-margin), 1.

Fig. 1.



Papillomatous growth at and near sphincter vesicæ, in a case of cystitis gonorrhoica.

Where it occurred as an accompaniment of carcinoma, the latter had, in every case, spread from the uterus to the parametrium and thence to the bladder-wall. In all four the base of the bladder, either at, or just above the ligamentum interureterieum, was affected, and was marked by pronounced transverse folds involving, in three cases, either one or both ureteral orifices, in the fourth leaving both unaffected. The diseased parts of the bladder-wall were, in each case, covered with edematous, or congested and edematous mucous membrane, marked with numerous, transparent bullæ. The vesical symptoms complained of were, in two cases, frequent and painful urination, and, in the other two, diurnal and nocturnal incontinence of urine. In the first two cases, the character of the urine indicated inflammatory vesical changes, in the last two it was entirely normal, giving no microscopical evidences of inflammatory reaction.

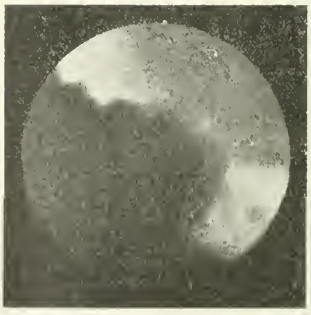
In the four cases of catarrhal cystitis colli, as also in those of suppurative and gonorrheal character and in that of urethritis, the circumference of the sphincteral margin was marked by discrete, transparent vesicles. In one case the trigone also was affected; the rest of the bladder was normal.

The symptoms, in each of these patients, were those of the original condition, *viz.*, cystitis or urethritis, abnormally frequent urination, with a varying degree of pain, or tenesmus. In those cases where it was an accompaniment of an ulceration due to cauterization with the cystoscope-lamp, it was not seen until the reaction had been in progress for several days, and the burnt surface had begun to slough away. In both cases the bullæ formed immediately at the circumference of the ulcer. In neither case was there any symptom referable to the ulcer, although one occurred in a case of suppurative cystitis. Where it occurred in the course of a pyosalpinx and accompanying parametritis, the bladder-wall covering the tumor was found to bulge decidedly inward, to be edematous, and the seat of several ecchymoses and a number of transparent pea-like vesicles.

Here, again, the vesicles were, due to their transparent nature, recognizable chiefly by the shadows which they cast. Appropriate treatment of the exudate, which was followed by diminution in the size of the tumor, as well as regression of the inflammatory symptoms, was also followed by complete disappearance of the edema bullosum. Where it accompanied a cystocele, in an elderly female, the region of the lower margin of the sphincter, and the trigone were the seat of the vesicles. No signs of inflammatory changes were discoverable in this case, nor were any other physical symptoms than nocturnal and at times diurnal incontinence of urine present. Suspicion of carcinoma was not verified, although repeated, careful gynecological examinations were made with the view to determine this point.

I am not inclined to ascribe decided diagnostic value to this phenomenon, as it seems to occur as an accompaniment of many different inflammatory or infiltrative processes. I agree, however, with the views of Kolischer and Casper, that its presence denotes the extension of an inflammatory or infiltrative process to the bladder-wall, and its approach toward the mucous surface.

Fig. 2



Similar, but larger growth, on opposite side of sphincteral margin

650 Madison Avenue.

THE OPERATIVE TREATMENT OF UGLY EARS.[1]

By JOHN B. ROBERTS, M.D.,
OF PHILADELPHIA;
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EVEN within what may be termed physiological limits great variation exists in the size and contour of the external ear. Disfigurement occurs, however, when there is a disparity in the size of the two organs, when any other condition of asymmetry is present, or when a marked variation from the usual size, position or contour exists in one or both auricles.

This short paper is presented to the Society to direct the attention of its members to the great improvement possible in many auricular deformities. A recent French author has intimated that all medical men should be cognizant of the possibilities of modern aseptic surgery; because, even if unprepared or unwilling to undertake certain operative procedures himself, every practitioner should be at least familiar with the fact that in given conditions operative relief is possible and perhaps imperative. This same line of argument holds good in the case of unsig conditions of the ears. Many persons care little for personal appearance and are not affected by the existence of a deformity which would make another individual morbidly sensitive and very unhappy. It seems well, therefore, for all surgeons to study with some degree of earnestness the correction of auricular defects. The subject is perhaps the more worthy of attention as operative treatment for the correction of these conditions is free from risk and usually unaccompanied by confinement to bed or even absence from business pursuits.

A lacerated or incised ear should be subjected to thorough sterilization and careful suturing, so that the irregular surface may match that of its fellow. Fine silk is probably the best suture material. Wisdom in directing the course of the needle through the tissues will enable the surgeon to preserve the shape of the organ and make a very good ear even after considerable loss of structure.

After the removal of tumors or the occurrence of sloughing from burns, frostbite or injury, much artistic skill is occasionally demanded order to restore the symmetry of the two ears. It may at times be necessary to alter the shape or size of the uninjured ear, to obtain a proper correspondence with the one which has been subjected to a traumatic change. If material is needed to take the place of lost tissue, it is to be transferred from the neck or cheek or transplanted from the hand, abdominal wall or thigh. A portion of a finger or a flap from the palm of the hand may be utilized; or a thick flap from the front of the abdomen or the thigh may be first grafted upon the hand and two or three weeks later fixed to the stump of the ear. Such a mass of muscle, fascia and skin is then modeled into proper shape by a series of minor operations.

[1] Read by title before the Medical Society of the State of Pennsylvania, Wilkes-Barre, September 20, 1900.

The deformity due to tearing out earrings or to the simple piercing of the lobule for these ornaments requires excision of the cicatrized margins of the fissure or orifice and neat suturing. The proceeding is practically the same as that to be adopted if a native of Africa or the South Seas desired relief from the disfigurement left after discarding the customary nose-ring or lip-plate.

Some deformities or distortions may be corrected by orthopedic means, such as pads or springs, or by repeated applications of collodion Artificial ears have been constructed of metal and other materials, and it has been suggested to imbed plates of platinum within the tissues to give rigidity to flaccid parts.

Congenital nodules in the region of the ear, sometimes called supernumerary auricles, are to be excised; unless they can be used to advantage in correcting the shape of the true auricle, in case it be misshapen. Fistulæ in the same region are to be closed by dissecting out the tubular tract and neatly closing the resultant wound.

Very large ears may be successfully reduced by excising a wedge-shaped piece, or by removing a crescentic piece from the central portion of the auricle and a horizontal strip outward from the centre of the convex margin of the crescent. It is not rare for the auricles to seem exceedingly large, when the real cause of the uncomeliness is the manner in which they stand out from the side of the head. Flaring ears seem elephantine when not much above normal size. The two conditions may coexist. The deformity then becomes very conspicuous.

Flaring ears are corrected by excising a vertical ellipse of skin and fascia from the posterior surface of the auricle and the adjacent po of the skull, and then cutting a vertical wedgelike strip from the exposed cartilaginous structure of the organ. Sutures are then employed to sew the auricle close to the skull. Bandages or spring pads are to be used until the union is sufficiently firm to prevent tearing of the scar tissue by unexpected movements during sleep. If a condition of gigantism coexists with the flaring, the operation for reduction of the size of the auricle may be done at the same time. A similar method is to be employed in lap ears, in which the auricle droops forward because of imperfect development of cartilage. The displaced organ should be sewed to the scalp in such a way as to neutralize the tendency to droop. It might be possible to stiffen the auricle by inserting a thin sheet of metal in the tissues. Perhaps such an implanted metallic strip could be bent, after it had become encysted, to resemble more closely the ridges and hollows.

Absent ears, from a want of development during intra-uterine life or from accident, may be represented by celluloid, papier maché or platinum constructions, properly tinted. Instead of these appliances, repeated plastic operations may be successful in making a rude representation of the normal ear.

THE HYDRIATRIC TREATMENT OF TUBERCULOSIS.[1]

By J. H. KELLOGG, M.D.,
OF BATTLE CREEK, MICH.

(Concluded from page 768.)

Reports of a few cases are appended which are presented as illustrations of what may be expected of rational hydriatric treatment conducted under favorable conditions. An elevated region is unquestionably necessary to secure the best results from hydriatric treatment, nevertheless the experience of Winternitz, Aberg, as well as my own, has clearly demonstrated that it is possible to effect a cure of tuberculous disease of the lung by hydriatric treatment without this advantage.

SQUARE CHEST PACK. (1.)
Fig. 13.

Case I.—Rev. G. T. came under my care in the autumn of 1866. I found a cavity as large as a hen's egg in the left apex. The patient was expectorating freely; portions of the yellow elastic tissue and great quantities of pus were constantly present in the sputa. He had an even temperature of 103° F., pulse was 90 to 100, breath exceedingly short. The patient was greatly emaciated and scarcely able to walk. I pronounced the case a hopeless one and advised the patient to return home, but he refused to do so and insisted upon receiving treatment. He showed so much pluck and determination that I thought I ought to give him a chance. The result was that in four months the patient returned home with a normal temperature, only a slight cough, very little expectoration, and pulse 60. He was able to walk several miles and to resume his profession as a clergyman. After a few months more spent under my care by my advice he went to Colorado to reside. For many years I heard from him frequently and he always represented himself as enjoying good health.

After seeing so many cases of recovery from this dread malady by the employment at the Battle Creek Sanitarium of the measures named, I determined several years ago to secure if possible the same advantages for patients in a dry and elevated region. Within the last five years the establishment of a well-equipped sanitarium under the same auspices at Boulder, Colo., has afforded opportunity for observing the progress of patients under rational treatment at an elevation of between five and six thousand feet. The large number of recoveries which have occurred, and the astonishing rapidity with which they have taken place in many cases have convinced me that by a combination of thoroughly rational and physiological treatment with climatic advantages, a cure may be secured in seventy-five or eighty per cent. of all cases of consumption when treatment can be begun in the early stages of the disease and in perhaps forty or fifty per cent. recovery may be expected in cases in which the disease has attained to the second stage before treatment is begun. Recovery may be expected in a small proportion of cases even when the disease has made still greater advances.

The following report of cases of pulmonary tuberculosis successfully treated by hydriatric measures at the Boulder Sanitarium, Boulder, Colo., has been kindly furnished by Dr. W. H. Riley, Superintendent of the Boulder, Colo., Sanitarium.

Case II.—Mr. B., from Ohio, aged twenty-eight years. Gave history of tuberculous trouble in his family. The patient had enjoyed fairly good health up to about three years previous to placing himself under my care at the Colorado Sanitarium. At about this time, that is, three years previous to his coming under my care, he had bronchial trouble from which he partially recovered. Later his cough increased and he began to expectorate and had a temperature of 101.5° to 102° F. at night. When he came to the Colorado Sanitarium he had a bad cough, expectorated and had a temperature of 101° F. at night; was very weak, thin, and anemic, and could walk only a few rods at a time. The physical examination of chest revealed a partial consolidation in the upper and middle lobe of the right lung, and the bacilli of tuberculosis were found in the sputum. He was placed under treatment and soon began to improve. His cough and expectoration disappeared and his temperature receded to normal. The improvement continued, and at the end of six months he had gained twenty-two pounds, weighing more than he had before in his life. Cough and expectoration had entirely disappeared. He had no rise of temperature and no

[1] Read before the American Climatological Association, Washington, D. C.

signs of lung trouble. I examined this patient about a year after he was dismissed from treatment and at this time there were no physical signs of any disease in his lungs. I have had

SQUARE CHEST PACK. (2.)

Fig. 14.

opportunity to see this patient at frequent intervals for nearly four years. He has had no rise of temperature, no cough or expectoration, and no physical signs of the disease up to the present writing. He is at present a prominent lawyer in the city of Denver, and enjoying a successful professional career.

Case III.—Mrs. B. F. J., from Alabama, gives following history: Grandfather, grandmother, brother and husband died of tuberculosis of the lungs, the last six months before the patient came to Colorado, August 2, 1899. Patient has never been strong, but felt well until twelve years ago, when she had an attack of typhoid fever. Has not been as well since. During the past three years has had more or less trouble with the stomach and bowels, indigestion, etc. In the fall of 1898 her physician discovered that she had tuberculosis of the lungs. Has had some cough, some expectoration, and some slight rise of temperature in the afternoon for some months previous to coming to the Colorado Sanitarium. When the patient entered the Sanitarium she was very thin, pale, anemic, and had distressing symptoms of indigestion in her stomach and bowels; had great difficulty in finding anything she could eat, and her food always gave her more or less distress; poor circulation, cold extremities, some cough, some expectoration, temperature 99 to 99.8° F. in afternoon. Physical examination of the chest showed partial consolidation of the apex of the right lung. The bacillus of tuberculosis was found in the sputum. Patient was placed under treatment, and for the first few weeks did not seem to make very much improvement. Stomach and bowels continued to give her very great trouble. By careful regulation of the diet and other treatment this difficulty was overcome. Patient remained under treatment at the Sanitarium for about four months. After the first few weeks of her sojourn she began to improve, and from this time on until she left the Sanitarium her improvement was gradual and quite rapid. When she stopped treatment November 28th, she had no cough, no expectoration, no rise of temperature. Physical examination of the chest showed that the lung was almost entirely clear. She had gained twenty-eight pounds in flesh. She remained in the city after leaving the Sanitarium and was under my professional care. At the end of another two months patient had gained forty-four pounds in flesh, had rosy cheeks, hard, strong muscles, and no signs whatever of any disease of the lungs, stomach or bowels. At the time of present writing patient is still enjoying good health and still holding to the flesh she gained. She weighs more than ever before in her life and is strong and healthy in every respect.

Case IV.—Mr. H., from Pennsylvania, aged twenty-four years, came to the Sanitarium October 18, 1899. Patient gives no history of any hereditary trouble in family. One brother died

SQUARE CHEST PACK COMPLETED. (Front View.)

Fig. 15.

of diabetes. Two years previous to his coming to the Sanitarium he spit up blood, a mouthful at a time, and at different time had slight hemorrhage. Some four or five weeks before coming to the Sanitarium his physician made an

examination of the sputum and found the bacillus of tuberculosis present. When patient entered the Sanitarium he had cough, expectorated considerably, pain in his chest, an evening rise of temperature, night-sweats, loss of flesh, troubled with shortness of breath, cold extremities, and weak action of the heart. Was thin and unable to walk more than a short distance without fatigue. On physical examination of chest there was found dulness on percussion, and diminished respiratory murmur in upper part of right lung, and the same signs but to less degree in the upper part of left lung. Patient also had more or less trouble with stomach and bowels with symptoms of indigestion. Patient remained from October 18th to February 21st.

SQUARE CHEST PACK COMPLETED. (Rear View.)

Fig. 16.

When he left the institution, had gained eighteen pounds in flesh, had no expectoration, the cough was practically all gone, and the temperature was normal. Physical examination of the chest showed some slight physical signs of thickening of lung tissue in the upper part of right lung.

Case V.—Miss E., aged twenty-two years. Family history negative. Came to the Sanitarium October, 1898. Four years previous to her entering the Colorado Sanitarium patient had slight hemorrhages at different times for about one week. Blood came up while coughing. She thought she completely recovered from this and enjoyed very good health for a time. About one year before coming to the Sanitarium she coughed up little blood again. In July, 1898, she had quite severe hemorrhage from lungs, and has not been well since. Three years ago she took a bad cold and has had severe cough since. When the patient entered the Sanitarium she had cough, expectoration, flushed face, and was pale about nose and eyes. Pulse sitting was 92. Temperature at noon and in the afternoon 99.4° to 99.8° F. Patient was weak, not being able to walk far without becoming tired. Had lost considerable flesh. She also had more or less trouble with stomach and bowels, with poor circulation. Physical examination of chest showed dulness on percussion in apex of right lung. Diminished vesicular murmur, and subcrepitant râles over the same area. She also had some trouble with her throat which was tuberculous in character. She remained under treatment until March 11, 1899. When she stopped treatment she had gained very much in flesh and strength, had scarcely any cough, no expectoration, no rise of temperature, and was feeling well and strong.

Case VI.—Mr. F. R. Park, from Georgia. Aged twenty-three years. Came to the Sanitarium December 17, 1897. Family history, negative. Patient's health began to fail years previous, during which time he suffered from indigestion while at school. Had severe cough which lasted four or five months. When he came to the Sanitarium had cough, expectoration, temperature of 99° to 99.5° F. in the afternoon. Symptoms of indigestion with poor circulation. Patient was very thin, anemic and week. Physical examination of chest showed marked dulness on percussion and bronchial breathing over apex of the right lung. Was placed under treatment and soon began to improve. Continued treatment until May 10th, at which time he had gained fourteen pounds in weight, and had no cough, or expectoration, and physical examination of chest showed that the partial consolidation of right lung which was present at the beginning of treatment had almost entirely disappeared. I have watched this case now for nearly three years. The patient is an active business man in Colorado and is enjoying the best of health at the present time, which is nearly three years since he was treated for tuberculosis of the lungs.

Case VII.—Mr. M., aged twenty years, from Wisconsin, came to the Colorado Sanitarium in July, 1896. Patient's mother had some lung trouble the nature of which is not known. The young man had usually enjoyed good health previous to the beginning of his lung trouble, which was in the spring of 1896. His trouble began with night-sweats, cough, expectoration, and he also lost considerable flesh. A few months after the appearance of these symptoms patient came to the Colorado Sanitarium and placed himself under treatment. When he came he was pale, anemic, and weak, with an evening rise of temperature. Physical examination of chest showed considerable thickening and consolidation of tissue in upper part of left lung.

Examination of sputum showed presence of bacillus tuberculosis. As soon as placed under treatment he began to recover and made rapid improvement. Temperature was soon reduced to normal. Cough, expectoration, and night-sweats disappeared. In a few weeks he had gained forty-five pounds in weight and proportionately in strength. During part of the time he gained one pound per day. He looked well, ruddy appearance, large physique, well filled out, and gave every indication of robust health. Something like a year after the patient was dismissed from the Sanitarium I had an opportunity to examine his chest again. There were no signs, whatever, of the disease. I have had an opportunity to watch this case now for nearly four years. The young man has been engaged in heavy manual work the greater part of the time and is enjoying the best of health.

Case VIII.—Mrs. B., from Kansas, came to the Colorado Sanitarium October 10, 1899. Patient gave history of consumption on father's side of family, also had one sister who died of pulmonary tuberculosis. Patient had the grip in 1898 which left her with cough. She had coughed and expectorated since, and her general symptoms grew worse. When she came to the Sanitarium her symptoms were as follows: Appearance very poor, tongue heavily coated, white and dry. Digestion very much impaired, much constipated, high raging fever in the afternoon and temperature of 103° F. or above. Pulse 120 or more sitting. Patient very thin and very weak, respiration very rapid, dyspnea, and at times her general condition indicated approaching collapse. She was very anemic, and very weak. Could walk but a few steps at a time. Physical examination of chest gave evidence of large cavity in lower part of left lung and physical signs of consolidation throughout the remaining part of left lung. Also crepitant and subcrepitant râles over greater part of left lung. Also some physical signs of consolidation in upper part of right lung. This patient was placed on rest cure, and given such food as could be easily digested. Was given cool wet hand-rubs, cool mitten-friction in the evening with cool compress on chest, changed every fifteen minutes, and kept up from one hour to one hour and a half, and followed by cold moist pack on chest which was worn through the night. This treatment was given every afternoon and evening while the temperature was highest. In the morning while temperature was lower, the patient was given hot and cold to the spine, with dry friction and oil-rub. Patient also used nebulizer containing creosote and other antiseptics. Bowels were kept open, and patient was requested to drink freely of water. The results of this treatment were most gratifying in this case of advanced pulmonary tuberculosis. It should be observed that the temperature of this case was 103° F. or more in the afternoon and had been so for some time before the patient came to the institution. After one day's treatment the temperature dropped from 103° to 101.3° F. The next day or two there was a fraction of a degree rise, but this again receded and gradually declined. After one week's treatment the highest temperature was 100° F. in the afternoon. The patient only remained under treatment about two weeks, but the improvement was very marked in every way when she left the Sanitarium, her temperature was about 100° F. in the afternoon. The appetite was much improved, breathing very much slower and deeper. General condition much improved and with her friends she took an overland trip in an open wagon to her friends in Kansas. This patient might have been improved more had she remained under treatment longer. She discontinued treatment contrary to advice. This last case represents a class of cases that come to the institution in the advanced stage of the disease. These cases as a rule are not cured, but many are benefited, and the results of treatment as illustrated in this last case show clearly the beneficial effect of hydriatric treatment when properly selected and rightly applied, even in the advance stages of pulmonary tuberculosis.

Summary.—The essential features of rational hydrotherapy as applied to pulmonary tuberculosis may be summarized as follows:

1. Both general and local cold applications to the skin.

2. Careful graduation of the application both as regards its intensity, duration and frequency, by modifying the temperature and mode of procedure, keeping always within the limits of the patient's ability to react. The best methods for accomplishing this are dry friction, wet hand-rubbing, wet mitten-friction, cold towel-rubbing, wet sheet-rubbing, half-baths, the general douche.

3. The application of compresses, hot and cold, as a means of relieving pain and controlling the local blood-supply, especially the use of the chest-pack to relieve cough and to aid the tissues in combating the disease and the employment of the hot sponge-bath and various other hydriatric means for relieving special symptoms.

I regard a dry elevated region a condition essential for the best results in the majority of cases. In observations upon some hundreds of cases during the last twenty-five years, I have seen excellent results at altitudes ranging from 1500 to 5500 feet. The constant applying of stimuli of various sorts upon the skin, such as sunlight, variations of temperature, etc., are an important means of maintaining vascular tone in the internal parts of the body and in stimulating metabolism and general functional activity. By hydrotherapy we are able to exaggerate or diminish the impressions sent inward from the skin and thus to control nearly all the bodily functions to a marvelous degree.

In fairness I must say that I have seen good results in cases in which hydriatric treatment has not been systematically carried out. I must also record the fact that results have unmistakably

been far more uniform, more permanent, when hydriatric treatment has been employed in connection with climatic change. For a number of years back I have been in the habit of sending cases of this class to the Colorado Sanitarium at Boulder, Colo., or the Guadalajara Sanitarium at Guadalajara, Mexico, where patients have the advantage of thorough hydriatric treatment and the results have certainly been excellent. Not all patients have recovered, by any means, and it is very difficult to say in any case that an absolute cure has been effected.

In advanced cases in which the breaking down of lung tissue has advanced to the formation of large cavities and when large areas are involved the prospects for a radical cure by hydriatric methods is of course small, nevertheless in even these unpromising cases a marvelous degree of improvement is often secured and the patient's life prolonged for many months and even years.

ABSORPTION, MOTILITY AND DIGESTIVE POWER OF THE STOMACH.[1]

By A. E. AUSTIN, A.M., M.D,
OF BOSTON.

IT is evident that undue importance is being attached the the secretory power of the stomach. To the determinations of HCl great interest has been given, perhaps on account of the fact that this was one of the first and most tangible substances in stomach-contents which could be determined, and pages have been written on anacidity and hyperacidity of the stomach. While allowing to this a moderate share of the importance which has been given it, we must bear in mind that secretion is not by any means the only function of the stomach. It is a well-known fact that in anacidity there always exists a compensation between the amount of HCl lacking and volatile acids, chiefly lactic, acetic, etc., which, with the aid of pepsin, can to a large extent digest the food which enters the stomach.

The discomfort arising from this condition appears to be due not to failure of digestion, but to the gases which are formed coincidently with the volatile acids. Boas has called attention to the presence of sulfureted hydrogen, while others have also called attention to hydrogen, CO_2, etc. Von Noorden, who has performed a number of experiments in this connection, in his "Pathologie des Stoffwechsels" (pp. 241-247), expresses the following view: "If HCl is wanting in the gastric juice, its loss is not seriously felt, because, if the contents are promptly poured into the duodenum, their further digestion is completed by the pancreatic juice, and examination of the fæces shows no greater loss of nitrogenous material than as though the HCl were present in normal amounts. Hyperacidity, or, rather, hyperchlorhydria, has rather more serious results on account of the attacks of pain which are produced by this highly acrid secretion. The digestion, however, is no more seriously affected than under the former conditions, because this highly acid solution, promptly neutralized by the alkaline secretions of the intestines, undergoes perfect digestion, with no exceptional loss of nitrogenous material."

Lack of motility, or, as it is sometimes termed, gastric insufficience, on the contrary, causes vastly more serious disturbances of digestion and, consequently, of nutrition. This, resulting as it may either from a narrowing of the pyloric orifice or a lack of tonicity of the muscular coats of the stomach, allows the contents of the stomach to remain a much longer period than is customary in normal digestion, thereby causing fermentations which produce intensely acid material, gases of various kinds, and often even toxins, giving rise to all the symptoms associated with tetanus. In the more recent literature pertaining to this subject, numerous instances are given in which acute dilatation, which is only an increased degree of this condition, has produced death. As a rule, absorption and motile power of the stomach keep pace with its secretory powers. We have an instance, however, in the case of cancer of the stomach, in which, while the secretory power suffers most seriously, even to the absence of both pepsin and HCl, the motive power is increased to such a point that often exaggerated movements of the stomach are perceptible through the abdominal wall. The residue which is found in the stomach at the withdrawal of a test-meal is dependent upon three factors, *viz.*, the patency of the pylorus, motility, and absorption. In addition to this, we must also add a fourth factor, the activity of osmosis. It is well known that a constant osmosis takes place by which certain substances, such as sugar, peptone, etc., are absorbed by the stomach, while, on the contrary, there is a constant exudation of water into the stomach from the blood. This has no relation to the secretion of pepsin, HCl or rennin, but depends rather upon the nature of the substance taken as food. For instance, in these experiments it has been frequently noticed that the amount of fluid withdrawn from the stomach is much less after pure albuminous substance has been given, than when the albumin and carbohydrate have been given in the form of an Ewald meal. It can also be demonstrated that the water which is given in a test-meal is never withdrawn in its entirety, nor is it probable that the water found is identically the same as that given. We have an analogous circumstance in the increased urine resulting from drinking large quantities of water, when the water in this increased urine is evidently not the same as that which is drunk. Hence we may have different degrees of dilution of stomach-contents, according to the activity of osmosis. This renders quantitative determinations, of course, only relative. Another factor is our inability to be sure that all the contents are withdrawn from the stomach. Further, the removal through the py-

[1] From the Chemical Laboratory of Tufts College Medical School.

lorus may be hastened or retarded and absorption of the digestive products more or less rapid. If, as some investigators insist, the pylorus is not open until digestion is complete, it is an easy task to test the residue before the contents leave the stomach for the amount of albumose peptone left unabsorbed. According to other views, there may be a constant discharge of the liquid contents into the duodenum, solid particles remaining behind. Yet no digestion is ever complete, either artificial or stomachic, all the albumin may be in solution, there may be no albumin coagulable by heat, but we never fail to find some acid albumin. In contents which were withdrawn sixteen hours after food was taken, some acid albumin was found.

There exists a certain confusion between the term absorption and motility. Bouveret says, "If, after an Ewald meal, more than 40 cc. are withdrawn, it shows a slow absorption." Since water is so little or not at all absorbed, and the greater flow is always in the direction of the interior of the stomach, in experiments where the pylorus is closed by ligatures it is difficult to understand what the amount of fluid has to do with the absorption. It seems evident that this factor (the amount) must always be a test of motility and not of absorption. The residual albumose peptone may, however, be taken as a measure of this absorption, representing as it does that portion remaining in the stomach after an hour's interval. Our object now is with a certain definite amount of albuminous food to establish a normal residual albumose peptone one hour after the meal.

The rapid method for estimating this was given by the writer in the *Boston Medical and Surgical Journal*, Vol. CXLII., No. 10. At first an effort was made to prove connection between gastric insufficience and poor absorption. In two cases stomach contents were removed fifteen hours after eating. There was found in one .017 gram albumose peptone; in another as the result of four removals there were found respectively .184, .011, 0 and .200 gram. Then 37 cases were examined, some once, some several times. These were all given a test-meal and the contents were withdrawn at the usual interval of an hour. In every case, the residual albumose peptone was determined and expressed in grams. In all, the upper limit was taken as representing the least favorable absorption, since only that part unabsorbed is being estimated. When two or more examinations were made, the results were averaged and the average also given. The results of these 37 examinations appear in the following table:

						Average.
Touley	.204	.534	....	....	...	.414
O'Tole	.185	.090	.051	....	...	.108
Levine	.256	.478	.104	....	...	.279
Roland	.660	.412	....	....	...	.357
Neilson	.380	.150	....	....	...	.265
Slatterly	.096	.300	.154	.360	...	.227
Montague ...	.575	.736	....	....	...	.665
J. M.....	.015	.056	....	....	...	.035
Album	.365	.503	1.320	.890	...	.769
Severo	.158	.175	....	....	...	.166
Dentz	.847	.318	....	....	...	.582
D. W.....	.155	.258	.100	.431	.300	.354 .266
E. B.....	1.346	.387	1.420	1.560	.620	1.066
Butler	.078	.660	....	....	...	.369
J. G.....	.540	126	.320	....	...	.328
Mary M.....	.235	.092	.033	.310	.050	.070 .131
O'Neil	.208	.336	....	....	...	.272
Cleaves	.250	437	.117	....	...	.268
A. J.....	.150	.197	.171	.230	.216	.193
F. S.....	.312	.333	....	....	...	.322
J. K.....	.300	.091	....	....	...	.195
H. M.....	.270	.220	....	....	...	.245
Mary M.....	.202	.180	.245	....	...	209
F. Smith....	.547	.115	....	....	...	.331
Lattimer	.540	.180	....	....	...	.360
Lackay	1.250	...	....	....	...	...
Lockhard	.198	.240	....	....	...	.219
Peterson ...	.280	..	....	....	...	...
Harrington ..	080	...	....	....	...	...
J. Smith... .	.185	...	....	....	...	...
Hogarty	.238	..	....	....	. .	...
Mahoney ...	.511	...	....	....	...	...
Sweeny	.089	...	....	....	...	...
Murphy	.576	...	....	....	...	...
M. B.....	.175	...	....	....	...	...
Oliver	.078	...	....	....	...	...
M. M.....	128	...	....	....	...	...

To determine a standard, if we arrange these results in order of the largest amounts of residual albumose peptone found, we have over 1 gram in 3 cases; between .8 and 1 gram in 1 case; between .6 and .8 gram in 3 cases; between .4 and .6 gram in 9 cases; between .2 and .4 gram in 12 cases; under .2 gram in 9 cases. From this we learn that .6 gram seems to be the limit beyond which absorption is delayed and impaired. It may be objected that in the lower limit, the results may as well be due to impaired digestion as improved absorption, but we learn in what follows that the digestive power of the gastric juice was always determined so that a decision between these two conditions can always be reached. If we take the average of the results where two or more examinations were made, we find that there is over 1 gram albumose peptone in 2 cases; between 8 and 1 gram in no case; between .6 and .8 gram in 2 cases; between .4 and .6 gram in 4 cases; between .2 and .4 gram in 17 cases; under .2 in 12 cases.

When we arrange the results in this way, we find that the greater number contained less than .4 gram of albumose peptone in the stomach at time of removal. As these cases were taken from the service of Dr. R. F. Chase, of the Boston Dispensary, to whom the writer's thanks are due, and were those in which mild gastric disturbances were complained of, they probably furnish a fairly satisfactory series from which to obtain results for future reference.

If, when increased quantity of fluid is withdrawn from the stomach, the albumose peptone remains the same, then the percentage must be lowered. If, on the contrary, an increased fluid content is accompanied by relative as well as absolute increase of residual peptone, then lack of absorption and impaired motility are associated. In urine, when we have largely increased amount

of fluid the percentage of solids is also diminished. Upon reference to our data, we find frequently associated increase of liquid and an increased percentage of albumose peptone. We have, for instance, the case of Lackay, with 250 cc. contents and 4.5 per m. of albumose peptone; J. G., with 102 cc. contents and 5.3 per m.; R. B., with 100 cc. contents and 6.6 per m.; E. B., with 132 cc. contents and 10.2 per m.; Album, with 95 cc. contents and 5.2 per m.; also the same with 200 cc. contents with 6.6 per m.; B. M., with 160 cc. contents and 4.6 per m. We have here unquestionably an association of diminished motility and impaired absorption. On the contrary, in two cases this law fails to apply—in Roland, with 200 and 125 cc. and 3.3 per m. in both, and H. L., with 145 cc. and 3.3 per m. These show that poor absorption is not always associated with lack of motility, but frequently is. With reference to the amount of HCl of those cases in which more than .600 gram albumose peptone was found, two had a lessened amount of HCl, four were normal, and one increased. In fact, there is no reason to believe that both conditions should be similarly affected, except that both are dependent upon nervous influence, and the result of shock, worry, etc., may be that of diminishing the flow of HCl, as well as retarding the absorption of the stomach.

Digestive power is necessarily dependent upon the secretory functions of the stomach, demanding at the same time pepsin and HCl or organic acids. But as the HCl is always determined we have a means of keeping a check upon the amount of pepsin present. If the HCl is normal, then the failure of digestive power must depend upon the lack of pepsin. The condition is rarely present, because pepsin is one of the most persistent ingredients of gastric juice. We must not lose sight of the fact that an excess of HCl may have an inhibitory action upon the action of pepsin. Experience shows that this is even more important than diminished HCl, for the latter deficiency can be made up by the presence of the volatile acids. The method for testing the digestive power of the stomach was given in the article in the *Boston Medical and Surgical Journal* to which reference has already been made. The factor used, so many parts per m., means that each gastric juice after digesting a requisite amount of albumin, contains so many parts of albumose peptone per m., less the amount it contained when withdrawn from the stomach; or, in other words, it was able to produce from native albumin so many parts per m. of its volume of albumose peptone. These results, with their average when more than one estimation was made, can be found in the following list:

							Average.
Touley	6.6	2	..	..	..	..	4.3
O'Tole	4.3	2.6	4.5	..	..	..	3.8
Levine	1.	2.	1.2	..	..	..	1.4
Roland	1.	2.3	..	..	..	..	1.6
Neilson	4.3	7.	..	..	..	..	5.6
Slatterly	3.5	2.6	.76	4.	..	..	2.7
Montague	4.6	3.	..	..	..	..	3.8
J. M.	3.	1.	..	..	..	..	2.
Album	2.	.6	1.	3.	..	..	3.3
Severo	5.3	4.5	..	..	..	..	4.9
Dentz	2.6	1.3	..	..	..	..	1.9
D. W.	1.6	3.6	4.	3.6	7.3	6.3	4.4
E. B.	2.6	2.	2.6	3.3	4.	..	2.9
Butler	1.3	2.	..	..	..	..	1.6
J. G.	5.3	5.6	5.3	..	..	..	5.4
Mary M.	3.6	2.3	5.	6.6	5.3	..	4.5
O'Neil	.3	.6	..	..	..	..	.4
Cleaves	3.2	3.3	..	..	..	..	3.2
A. J.	1.8	2.	6.6	7.3	7.3	..	5.
F. S.	5.3	3.3	..	..	..	..	4.3
J. K.	12.	7.3	..	..	..	..	9.6
H. M.	5.3	1.3	..	..	..	..	3.3
Mary M.	2.	1.2	2.3	..	..	..	1.8
Smith	4.6	4.6	..	..	..	..	4.6
Lattimer	1.3	.6	.8	..	..	.	.9
Lackay	5.	..	..	..	..	..	..
Lockhard	1.3	2.	..	..	..	.	1.6
Peterson	3.	..	..	..	..	..	..
Harrington	5.	..	..	..	..	..	..
J. S.	5 5	..	..	..	..	..	..
Hogarty	3.3	..	..	.	..	..	..
Mahoney	2.	..	..	..	..	..	..
Sweeny	2.6	.	..	..	..	..	..
M. B.	5.3	..	..	..	..	..	..
Oliver	2.6	..	..	..	.	..	..
M. M.	8.	.	..	..	..	..	..

Upon reference to these results, we find that when the largest digestive power in each case is taken we have a degree of digestion greater than 7 parts per m. in 5 cases; between 5 and 7 parts per m. in 10 cases; between 3 and 5 parts per m. in 10 cases; between 1 and 3 parts per m. in 10 cases; under 1 part per m. in 1 case. Judging from the most numerous in each division, we are led to believe that this power of the secretive action of the stomach may vary anywhere from 1 to 7 parts per m. Above and below these figures, few cases occur. Upon referring to the average, where two or more examinations were made, we find that this power was 7 and over per m. in 2 cases; 5 to 7 per m. in 7 cases; 3 to 5 per m. in 13 cases; 1 to 3 per m. in 12 cases; below 1 per m. in 2 cases. Here the results are so narrowed that 1 to 5 parts per m. seem to include the majority of those cases examined. When the digestive power is a weak one and HCl is normal, there must be a lack of pepsin. There is an excellent illustration of this in the case of O'Neil, who had a total of HCl of 2.5 and 2.6 per m., with free acid, yet has only a digestive power of .6 and .3 of 1 part per m. Montague is another, with a total HCl of 2.3 per m. and a digestive power of only .3 per m. Unquestionably, we may also have cases where the amount of HCl is enough to inhibit the action of the pepsin. Album has an HCl of 3.9 per m., and a digestive power of only 1 per m. Cleaves, also, has an HCl of 3.1 per m., and a digestive power of only .3 per m. We have also the possibility that the amount of pepsin is limited and, if distributed through a large amount of fluid, the 10 cc. which were always taken for these tests would contain much less pepsin than a gastric content of lessened amount. We can see an illustration of this in the case of Levine,

with 145 cc. contents and 2 per m. digestive power; Roland, with 200 cc. contents and 1 per m. digestive power; Montague, with 160 cc. contents and .3 per m. digestive power; and Album, with 200 cc. contents and 1 per m. digestive power. Upon consideration of all the facts presented by these determinations, we may be allowed to arrive at the following conclusions: (1) No examination of the stomach is complete without testing its absorptive power. (2) The method herein employed, until a better one is devised, gives us as much information as any method extant. (3) Presumably, retardation of absorption does not occur with simple hypotony or gastric insufficience without dilatation. This may account for absorption being sometimes deficient and sometimes normal, with gastric insufficience. (4) In order to differentiate between a good absorption or a poor digestive power, the latter must always be tested.

THE NATURE TREATMENT OF TUBERCULOSIS.

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There is no question of more dominant interest to-day to the profession of medicine, to the student of sanitary science or to the general public—which depends upon both for its enlightenment in matters of disease—than the question of the possible prevention and cure of tuberculosis and, especially, of tuberculosis in its pulmonary form. The importance of this question is growing with the public recognition of the prevalence and fatality of the white man's plague. Its solution is coming to be in the popular, as it has long been in the professional, mind a matter of urgent demand.

Perhaps nothing has contributed more to this awakening of the public consciousness to its own dangers from tuberculosis than the failure and the consequent disappointment which followed, some years ago, upon the introduction of Koch's tuberculin. "It is better to fail than never to have any striving that is worth being called a failure," for it is so often true that the mistakes of to-day are the stepping-stones to achievement on the morrow. Koch did more for the future control of tuberculosis than to discover the tubercle bacillus. He did more than to put into the hands of the medical world an agent of diagnosis which has proved and is destined to prove of inestimable value in the discovery of diseases in men and animals. If he overshot the therapeutic mark, he pointed to a target of treatment which men have since sighted with greater success. If he did not find a curative agent, he suggested a scientific method of dealing with disease in its use. If he did not solve the problem the solution of which we are still seeking and toward the solution of which so many other abortive attempts have been directed, he stimulated professional inquiry and aroused popular consciousness to the possibilities of relief.

In the world of science, as in that of commercial values, demand is the constant stimulus to supply. When human society learns the economic value of human life and appreciates its waste—in a single direction and by a single cause—to the proportion of ten per cent. of its total, it will not be long before it writes an equation in which the third factor to be found by the sanatarian will be that of cure. And that we are several steps nearer to the finding of that required factor is largely due to the generally discredited labors, as well as to the earlier accredited discoveries, of Robert Koch.

The indications of the growth of this popular professional demand are everywhere manifest. They are seen in the enactment of ordinances in our great cities prohibiting expectoration in public conveyances and, in some notable instances, requiring the report of cases of pulmonary consumption to the health authorities. They are manifested in the publication of popular tracts and official directions concerning the avoidance of contagion and the destruction of diseased sputum. They are seen in the actual agitation, in a great commonwealth, of popular sentiment for the quarantine of a whole State against tuberculous pilgrims in search of climatic relief. They are seen in the organization, in several States of the Union, of societies for the prevention of tuberculosis. They are read in the formula of the objects of these bodies, well illustrated by the constitution of the Illinois Society, which is "to educate public opinion in the doctrine of the contagiousness of the disease, to instruct the public in practical methods of avoidance and prevention, to visit the consumptive poor and supply them with the necessary materials with which to protect themselves against the disease, to furnish them with hospital treatment, to cooperate with boards of health in preventive measures, to advocate the enactment of preventive laws and to establish branch societies throughout the State."

They are seen in the establishment of sanatoria and hospitals for the exclusive care of consumptives in certain of our big cities. They are shown in the special precautions which are being taken for the isolation of tuberculous patients among the inmates of insane asylums, schools for defectives, and penal institutions.

They have been evidenced within the past few months, by the assembly at the city of Berlin of an International Tuberculosis Congress, which was conducted with success—a success which is none the less important because it is rather popular than professional in its results. That success lies, not in the discovery or announcement of new facts or principles, but in the organization of agencies by which these known facts and principles may be applied. It means, as an operative influence, no especial stimulus to that patient effort of the pathologist, the clinician and the sanitary scientist which still goes on unceas-

ingly, but a stimulus to the practical employment of those means and measures which are the birth of the pathologic and sanitary science of to-day.

And, finally, these indications of a popular and professional demand for a realization of results are seen in the proposed or accomplished dedication of large tracts of land and forest and lake, as great public parks for the sake, among other desirable ends, of their preventive and remedial possibilities as great national or provincial health resorts.

All of these activities have been inspired primarily by the study of the etiology and course of the disease which has been going on, since the day of Koch's initial discovery, in the laboratories of pathology and bacteriology throughout the scientific world. This study of the warfare which is waged between the human tissue-cells and the bacillus tuberculosis has taught us and is teaching us, more and more forcibly, the practical lesson that the task of the public sanitarian and the physician is largely one of prevention, and that cure—a secondary and short-lived possibility in the course of the disease—is best to be accomplished by extending the principles and methods of prevention to the assistance of the tissue-cells in their life and death conflict with the disease. It means, on the one hand, to make the conditions of human life as favorable as may be for the integrity of the tissue-cells and as uncomfortable as possible for the tubercle bacillus. It means, on the other hand, to make the selfsame conditions of human life which will sustain that integrity operative for its restoration under attack. It means something in the way of hope for the future, when the statistics of human health in the large cities, even of the Northwest, show a phenomenally low death-rate, and when we learn from the lips of Minnesota bacteriologists that, in this region, their germ cultures have a provoking tendency to die out. In the adjustment of these two tendencies to each other we may obtain demonstration of the possibilities which hygienic measures afford for the maintenance or recovery of resistance upon the part of the tissue-cells to disease.

Strange, is it not, how intuitive is the quality of ideas which spring into action before the reason for their existence can be discovered! Modern science recquips the old hypothetic notion of the *vis medicatrix naturae* with the dignity of a demonstrable fact; and that fact gives us the impetus to the most hopeful movement of modern medicine toward what may be fitly termed the Nature treatment of tuberculosis.

There is nothing new in the isolated facts which enter into this, nevertheless, novel conception. No new principles were announced at the International Congress of Berlin, and yet the consummate value of the deliberations of that Congress lay in the recognition of a new system of treatment into which old facts fit and in the elaboration of methods by which that system can be practically employed. With a good understanding of these old facts we have been slow—as a child piecing his newly-learned letters into words—to compose them into the lesson that they teach. Long have many isolated cases of cure pointed out to us the advantages of some element of climate in the treatment of this prevalent disease. Long have we sought in differences of altitude and temperature and moisture for the key to these effects, while empiricism has dictated to us the advantages of this or that locality as an agency of cure. Out of their fortunate experiences, physicians have learned to extol the virtues of the Adirondacks of New York, of the Blue Mountains of North Carolina, of the forests of Ontario and New Hampshire, of the high altitudes of Colorado and New Mexico, of the dry, sand-swept plains of Arizona where decomposition is merely desiccation, of the warm, dry air of Texas and California, and even of the cold, dry air of Minnesota.

But only now, as the International Tuberculosis Congress of Berlin declared, are we learning that but two prime factors enter into the qualities of all these favorable regions, but two elements are essential in their curative or preventive qualities. These factors are purity and dryness of atmosphere, in whatever latitude, at whatever altitude, on plain or mountain, in forest or on ranch. The conclusion is a simple but potent one. It means a new emphasis upon the pernicious influences of the overcrowded quarters of our great cities. It means the necessity for a new development of suburban dwellings for the poor. It means the essential isolation of consumptives who pollute the atmosphere their neighbors breathe. It means a desirable reversion from urban to rural life. It means the establishment of sanatoria which shall afford sufficient cubic space for the diminished cubic area of tuberculous lungs. It means—it should mean—the segregation of lands in large tracts where these ideal qualities of atmosphere exist, where these qualities can be preserved and where they can be utilized for the conservation of the health of those who are well and the restoration of those who are diseased. It is not remarkable that the cities of California and Texas are beginning to blacklist consumptives. It is time they did. A quarantine against tuberculosis in our towns should be as effective as a quarantine against Yellow Jack.

The aggregation of disease-germs is dangerous anywhere, even though the atmospheric qualities of a given locality may be unfavorable to their development. Mass the tubercle bacillus anywhere and it will, sooner or later, work its destroying way. Disease-germs should be subjected to atmospheric dilution. Give them sufficient cubic area of pure, dry air and their most effective cultures will die out as they do in the laboratories of Minnesota. Put the tuberculous patient into the vastnesses of the pine forests of our Northwest and his cultures of the bacillus may not thrive.

New York has learned the lesson, and learned it expensively late, in the reservation of the

Adirondacks. Ontario has learned it in the segregation of the Algonquin Park. Minnesota is trying to put that lesson into practice by the enterprising initiative of her medical profession, by the public-spirited aid of her associated women's organizations, by the assistance of her Nature-loving friends in other States—in her effort to secure the creation of a great National Park in her pine forests and among the multitudinous lakes of the North. The health idea inspired and stands back of this project. To make this last great tract of native pine forest a national health resort, a natural sanatorium, is the primary and the most urgent argument for its segregation.

Other arguments obtain. In fact, no single public project carries with it more variant and cogent reasons for its success. Forest reservation is an economic necessity. The ruthless ax of the lumberman and the fire which follows in his destroying footsteps have almost completely removed from the face of this continent its vast areas of native trees. Forest culture has demonstrated its paying quality in European states. An object lesson in this science is needed in America. The forests of these Minnesota reservations can be made more profitable by tree culture than by agriculture.

The conservation of the Mississippi water supply in the matter of quality and distribution is a motive. The great natural sponge which the soil of the native forests forms acts at one and the same time as a vast filter and a vast reservoir. The artificial reservoirs which the Government has constructed at the headwaters of the Mississippi at an expenditure of millions of money, are less effective by far in the control of freshets and the distribution of the waters of the great valley than this native forest sponge.

The preservation of the indigenous game of this game-stocked region is a secondary reason. No more delightful sportsman's paradise can anywhere be found than its woods and lakes afford.

The salvation to posterity of this great park is another and a nobler motive. The lover of Nature needs but to see the beauties of these primeval pines and of these great inland lakes to feel that their final destruction would be a permanent loss to the higher life of the people.

But of more momentous consequence, of greater economic weight is the argument for the segregation of this area for sanitary purposes. Its opportunities are in therapeutic demand. The value of human life, not merely to the individual who possesses it, but to the State, far outreaches any measure of material wealth. The Nature treatment of tuberculosis in this available region will repay the nation in men more than it can gain in timber by its destruction or in navigation by its saving.

The sanitarians of this continent may exercise a large influence in determining the balance of public opinion in favor of the creation of the Minnesota Park. The American Public Health Association has already recorded its approval of the project. It should lend the weight of the personal influence of its members to the accomplishment of this end.

But while the question of climate, the quality of pure dry air, to be attained best by the preservation of such vast tracts of favorably conditioned land, is a large one in the Nature treatment of tuberculosis, it is not the only significant one.

The medical world is indebted to Dr. Walther of Nordrach, in the Black Forest of Germany, for an object lesson in this Nature treatment, for a demonstration of the results of a judicious combination, with favorable climate, of other important hygienic conditions.

The principle of as nearly physiologic rest as may be attained is of major importance. The influence of this factor in the treatment of tuberculosis was of common observation in the confinement of patients undergoing treatment, some years ago, with Koch's lymph. Hyperpyrexia is an invariable indication for complete repose. After its subsidence, the principle of carefully graduated exercise is of moment. By this method, the powers of the patient are systematically developed until they will endure sustained labor or excursions of from five miles to ten miles on foot.

And, finally, the principle of forced feeding, as to quantity, with due respect to the physiologic intervals of digestive repose, is a factor in the method. The gradual but material increase of food supplies is well endured, even in advanced cases and appears to go far in advancing the nutritive conditions of the tissues. If recent investigations into the relations of the leucocytes as primary agents in food absorption and elaboration give us a safe guide to follow, we may be better able to understand how forced feeding enhances their phagocytic power.

This, in a few words, covers the essential principles of what is fitly termed—the Nature treatment of tuberculosis. If, severally, its facts are not new, in their association they are of added weight and larger hope for the control of this most prevalent and destructive of the diseases of civilization.

MEDICAL PROGRESS.

Mortality from Diabetes Mellitus.—The 202 deaths from diabetes which occurred in the city of New York during 1899 have been classified by H. Stern (*Med. Rec.*, Nov. 17, 1900) to show the sex, age, nationality, complications, etc. The sex seemed to have no influence and the deaths were distributed about equally over the different seasons. The greatest mortality occurred between the fifty-fifth and sixty-fifth years, and diminished rapidly toward the end and beginning of life. Fifty-seven were born in Germany, 51 in United States and 37 in Ireland. It was es-

timated that at least 54 or 25 per cent. were Jews and 51 were Irish. Mental exertion, characteristic modes of living, gluttony, alcoholic intoxication, etc., are given as predisposing factors in causing diabetes more often in these races, but the potent influence is believed to be the breeding in and in to which the Jewish and Irish races still adhere. It has been supposed that diabetes mellitus is especially frequent among the well-to-do, but these statistics seem to indicate that it occurs in greater frequency among the working people among whom gluttony and leisure hours are exceptions. Coma is given as the direct cause of death in 60 cases, but undoubtedly pure diabetic coma occurred in a much smaller number. Gangrene was the most frequent complication and appeared in the foot or leg in 32 cases. Other frequent complications were septicemia, phthisis, nephritis, and cardiac dilatation.

Suprarenal Extract.—Another favorable report is made upon the action of the suprarenal extract in diseases of the respiratory tract. P. Floersheim (*Med. Rec.*, Nov. 17, 1900) has used it in rhinitis, acute tracheobronchitis, chronic bronchitis, congestion and edema of the lungs, hemoptysis and pulmonary tuberculosis. Its action in diseases of the upper tubes is more certain and the sensations of dryness, tightness and rawness are relieved, but acute bronchitis when treated from the onset was usually cured in twenty-four hours. The beneficial action obtained in congestion and edema of the lungs was undoubtedly due, not only to the constricting action upon the blood-vessels, but also to the stimulating effect upon the heart. Apparently good results were obtained in cases of hemoptyses, but it is, of course, speculative how much benefit was due to this drug. The powder is administered in three-grain capsules, chewed without water and swallowed in a few minutes. When the doses are sufficiently large the action is apparent in from two to fifteen minutes. In some cases the action of the drug is permanent, but in the majority of cases it lasts only from ten minutes to an hour and must be frequently repeated.

Meralgia Paresthetica.—This syndrome is the result of some functional or pathological change in the external cutaneous nerve, characterized by sensory disturbances of the anteroexternal surface of the thigh. Pain and paresthesia may, however, go beyond the zone of distribution of that nerve, but in the majority of cases only one branch is affected. A. Gordon (*N. Y. Med. Jour.*, Nov. 17, 1900) reports a case in which the condition came on after typhoid, and being peculiar from the fact that both the anterior and posterior branches were effected and at least one branch of the anterior crural. It also presented a phenomenon called intermittent lameness and described by Charcot as "claudication intermittente." Charcot's cases were characterized by severe pain and numbness of both legs when an attempt was made to walk, due to an arteriosclerosis which prevented proper nutrition during extra exertion. This case, however, showed no arterial changes and the pain was explained by the supposition that the psoas muscle when contracting aggravated the pains induced by the neuritis in the nerve lying on its surface. Electricity, massage, and potassium iodide are recommended, but are of very little service. The removal of a large portion of the external cutaneous nerve is the only rational and permanently successful mode of treating the genuine cases of meralgia paresthetica.

Serum Reaction in Fetal and Infantile Typhoid.—In a recent paper by Dr. John L. Morse (*Journ. Boston Society of Med. Sciences*, Oct. 16, 1900) this very interesting subject has received further consideration. The conclusions enunciated agree in the main with the facts already presented in scattered articles. From the article the following points may be gathered: The serum reaction occurs in infantile as in adult typhoid. As to whether or not it occurs in fetal typhoid the author has not been able to find any data bearing on this side of the question. The agglutinating power may or may not be present in the blood of infants born of women with typhoid. If present it is transmitted through the placenta. The author conceives the possibility of the formation of the agglutinating principle within the child in response to toxic principle transmitted from the typhoid mother. The agglutinating principle may pass through the normal placenta; part of it, however, is arrested in the passage. The conditions determining its transmission appear to depend on the strength of the agglutinating power of the maternal blood, and the length of time during which the placenta is exposed to it. Other observations show that it may be transmitted through the milk, sometimes appearing as soon as twenty-four hours. In the maternal blood in such cases the reaction is strongest; the agglutinating power of the milk is stronger than that of the nursling. This weakening is due to resistance to passage of the principle by the mammary gland and the nursling's digestive tract. The chief factors governing transmission appear to be the intensity of the agglutinating capacity in the maternal blood and some unknown condition in the digestive tract.

Pelvic Symphysitis.—A. Noto (*La Riforma Medica*, Nos. 177-179, 1900) records the history of two cases occurring in his own practice, which, with the thirteen other cases recorded since 1778, constitute all that is known of this rare disease. Case I.: A woman, aged thirty-eight years, whose previous history as to heredity, menstruation, and five previous pregnancies, was normal; two days after the delivery of her last child had a rise of temperature preceded by a violent chill; these phenomena appeared regularly for nine days without intermission and without discover-

able cause; death occurred on the tenth day; autopsy revealed nothing peculiar except the presence of pus at the symphysis pubis; the cartilage was eroded, exposing the bare bone. Case II.: A woman, aged thirty-nine years, who had had nine previous normal pregnancies and whose previous personal history was negative, three days after the birth of last child began to have chills and fever, which continued daily unabated, the lochia becoming by the eighth day extremely offensive; for this she sought hospital treatment; on her admission, examination was negative except that over the mons veneris a tumefaction was noted with all the manifestations of an acute inflammatory process, the pain being quite prominent; after incising, cleansing and draining this tumor over the symphysis, all of the acute symptoms subsided and the patient made an uninterrupted recovery. The author's conclusions are as follows: During pregnancy the affection comes on without cause, but is preceded by the relaxation of the joints involved in the gravid state; this physiological state may, if aggravated, become pathological; then standing is painful; the disease is usually caused by traumata during labor, when there is a disproportion between the pelvis and the fetal head; the active cause is the presence of a pyogenic germ within the joint giving rise to a general septicemia or pyemia; the symptoms generally appear a few days after labor, and are characterized by chills, fever, and general rapid prostration with but little external manifestation of the involvement of the symphysis pubis joint, until the process has become more advanced; then swelling and all the symptoms of an acute local joint trouble are manifest; usually as a result of this the cartilages are eroded and the bone surfaces bare. Occasionally the tumefaction becomes less circumscribed and a diffuse infiltration occurs, involving the abdominal muscle-sheaths or extending down into the labia, pain radiating toward the thighs or to the nates. The prognosis should be guarded, for the course of the disease is slow as regards recovery, and relief is to be had only by prompt, efficient, and thorough surgical intervention. Absolute rest must be insisted upon during a somewhat tardy convalescence. Supporting tonic treatment is also indicated.

Pulmonary Emphysema and Nasal Occlusion.—L. Bullara (*La Riforma Medica*, Nos. 183-184, 1900) deduces the following conclusions from experiments upon dogs. Complete occlusion of the nares produces emphysema in a few days and changes the respiratory rhythm, the frequency of respiration being decreased and the depth of respirations being increased. A smaller quantity of air enters the lungs when the animals breathe only through the mouth than when the nose is used in respiration; hence it is fair to conclude that when nares were occluded the dogs were forced to take deeper inspirations in order to compensate for the diminished volume of air entering the lungs; pulmonary emphysema, therefore, depends upon the increased volume of respired air, a purely mechanical result of occlusion of the nares.

Functions of Cerebellum.—R. Gatta (*La Riforma Medica*, Nos. 181-182, 1900) as a result of extended experimental observation on animals concludes that (1) the clinical syndrome of cerebellar disease is rendered multiform by the phenomena of compression and irritation of the contiguous and distant parts of the brain (the pons, medulla, cranial nerves and cerebrum); (2) the alterations in the cerebellum and the clinical and experimental phenomena are in proportion to the extent of the lesion; (3) complete destruction of the cerebellum in animals and similar lesions in clinical cases produce ataxia, asthenia, and atony; these effects remain for a long time in the experimental cases, although the functions return to a certain extent in some cases; (4) the pathological experimental processes, resulting from rapid intoxication, may occasion disease lasting months and years; (5) clinical observations are in accord with the results obtained experimentally.

Face Presentations.—O. Schaeffer (*Centralbl. f. Gynackol.*, Oct. 27, 1900) concludes that, as a rule, when the parturient canal is normal the forceps are usually contraindicated, both as a correcting and as a traction instrument in difficult face and brow presentations. Occasionally when the head is small and the occiput short or when the head is freely movable upon the trunk, they may in skilled hands and normal path of delivery serve to save a child otherwise lost. Force should never be applied. When the head is less movable, fixed manual correction after the method of Rose or Volland should be tried. The same observations apply to anterofrontal presentations with advance of the brow even in normal canals when mere bettering in the presentation is at stake. Finally, attention is directed to the fact that forcible traction along with the local mechanical extension and squeezing may set up long and severe nervous reflex phenomena.

Retrenchment of Lipomatous Abdominal Wall.—J. B. Bullitt (*Annals of Surgery*, Nov., 1900) reports a case of very large umbilical hernia in a fat person whose abdominal wall was four inches thick in fat alone. He approached the neck of the sac through a horizontal incision about three inches above it. After the usual steps for radical cure had been taken, the incision was extended to eack flank where it was joined by another lower down. The interval between the two comprised several pounds of fat which were ablated. The wound was drawn together by buried continuous catgut, deep interrupted silkworm-gut retention, and, finally, catgut buttonhole sutures. Primary union in a scar twenty-two inches long and four inches deep, with cure of the hernia, resulted. The pendulousness of the abdomen was largely removed, although a still greater segment could safely have been taken.

THERAPEUTIC HINTS.

Electricity to Remove Hair.—Léo Leistikow uses the platinum-iridium needle with Behrend's needle-holder, in which contact is broken by pressure on a stylet. The anode is placed in one hand of the patient and the needle introduced into the follicle in the direction of the hair, a current of 2 to 3 milliampères is kept on for 20 to 30 seconds, the needle withdrawn, and the hair pulled out with epilating forceps. Warm, moist compresses diminish the inflammatory reaction. While introducing and removing the needle, the current must be broken, or it causes pain and involuntary muscular contractions. The needle must be carried along the hair to the base of the follicle, or the hair will return. The procedure is very easy and effective.—*Monats. für prak. Dermatol.*

Fungous Diseases of the Skin.—The radical cure, writes P. G. Unna, of the true saprophytes of the corneous layer, as in erythrasma, and pityriasis versicolor, and of the hair, as piedra, leptothrix, and trichorrhexis nodosa, by the ordinary fungicides, such as mercury, sulphur, chrysarobin, tar, and iodine, is extraordinarily difficult. Mechanical methods (shaving, exfoliation, epilation, and pitch-plasters) have been used with moderate success. After much experimentation the author has found a chemical method at once mild and effective. He paints the affected area once a day for 3 or 4 days with:

℞ Paraform .....
Ether .....aa. 2.0 (gr. xxx)
Collod. flex.....16.0 (℥ss)

In generalized pityriasis versicolor, bands the width of the hand are successively painted and after 2 or 3 days rubbed with vaseline or zinc ointment until the scales are removed. By this means the whole body is cleaned in about 15 days. As an aid in the treatment Unna gives a daily wash with a superfatted soap containing 2 per cent. of formaldehyd.—*Monats. für praktische Dermatol.*

Ether for Sebaceous Cysts.—Emile Sergent uses Vidal's method of injecting ether until the cyst is distended. The needle being left *in situ*, some of the ether with dissolved sebaceous matter runs out. Then more ether is injected, and the process repeated until fluctuation is apparent, and a brownish crust appears around the needle entrance. The contents may then be readily expressed by opening up the tract with a stylet, and the empty sac removed through a comparatively small opening. The operation is bloodless, painless, without danger, and it leaves no disfiguring cicatrix. A small fibrous cyst with very little sebaceous matter is not likely to be benefited.—*La Presse médicale.*

Asthma.—Nothing is so likely to induce an attack, say Fowler and Godlee, as retiring before digestion is finished, therefore the principal meal should be taken at midday. Alcoholic drinks and coffee can rarely be taken safely. To ward off attacks, iodide of potassium, gram 0.3 (gr. v) t. i. d., increased rapidly to gram 4.0 (℥i) a day, has been of most service, and to this may be added the ethereal tincture of lobelia, gram 1.3 (℥ xx), or extract of stramonium, gram 0.015 (gr. ¼). Arsenic is worthy of trial, but is of less value. Some patients never retire without burning niter paper, made by saturating blotting-paper with a 1-in-16 solution of potassium nitrate, or smoking a cigarette containing stramonium or some such remedy. As regards locality, every asthmatic is a law to himself; most find that in the smoky atmosphere of a large town they are more free from attacks than elsewhere. If chronic bronchitis is the cause, a warm, dry climate, avoidance of exposure to cold and damp, and cod-liver oil are indicated. When the nervous factor predominates, with slight catarrh or emphysema, a high altitude is usually preferred. Inhalation under pressure of a hot, dense vapor, as at Mont Doré, is often of benefit. When a gouty factor is present, colchicum and alkalies are indicated, and mercury and saline purgatives in constipation and functional derangements of the liver. In some persons these latter are certain precursors of an attack. Morbid conditions of the nasopharynx require local or climatic treatment.—*Diseases of the Lungs.*

Exophthalmic Goiter.—M. A. Starr recommends rest, careful diet, and glycerophosphate of soda, gram 1.0 (gr. xv) three or four times a day, to counteract the poison in the blood. Mercury inunctions to the neck, especially of the red iodide, tincture of iodine, gram 0.3 (℥ v) t. i. d., and belladonna, are sometimes of use. Iron and arsenic may be administered as tonics. Injections of iodine and other irritants are dangerous, and digitalis, strophanthus, and counterirritation are of little use. When pressure symptoms arise from the enlarged thyroid, partial extirpation must be performed.

Scabies.—To avoid the irritating action of the ordinary remedies for itch in children, Léon Perrin rubs the whole body at night with

℞ Camphor oil of chamom. 100.0 (℥iijss)
Ointment of liq. styr... 20.0 (℥v)
Balsam of Peru..... 5.0 (grs. lxxv)

The next morning wash with soap and hot water, and powder the skin with starch. If the skin is a little inflamed apply zinc-oxide ointment. The first night the itching ceases, and in eight or ten days the cure is complete. To avoid recurrence all the clothes and bedding must be washed with disinfectants.—*Journal de Médecine de Bordeaux.*

Insomnia of Alcoholism.—For patients suffering with acute alcoholic delirium or alcoholic mania, Dr. D. R. Brown recommends:

℞ Chloralamid ..... 1.0 (gr. xv)
Hyoscin hydrobrom. 0.0006 (gr. 1/100)

—*Trans. Seventh International Congress on the Abuse of Alcohol.*

The Medical News.

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OF MEDICAL SCIENCE.

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NEW YORK AND ITS WATER SUPPLY.

In a municipality of the size and importance of New York City it is incumbent upon the authorities to provide for its citizens a good water supply. It is not enough that the water should be free from *materies morbi* capable of producing disease, but such water should be palatable, free from taste and odor and sufficient to meet the demands of modern civilization.

For the past three weeks the water of the Borough of Manhattan has not been up to its usual excellent standard. Different sections of the city have been affected in different manner, but there has been an almost universal complaint of turbid water with a decidedly disagreeable "fishy" or "oily" taste. The weekly reports of the Health Department have not shown that there are any unusual contaminations that might render the water unsafe to the consumer and there are no reports of illness that are directly traceable to it. The question seems to resolve itself into purely a "matter of taste."

The subject of tastes and odors in water supplies is one that has engaged the attention of many investigators. Early observers ascribed disagreeable tastes to the presence of products of decomposition, but of recent years it has been recognized that the distasteful elements are due not to the dead, but to the living organisms that grow in most water supplies. Certain minute plants and animals growing in exceedingly large numbers are the offenders. Among these certain diatoms, as well as some of the other algæ, and a few of the lower animals develop in their protoplasm, as processes of their life activity, certain oils, which are closely related to many aromatic compounds of higher plants.

The Medical News has had some examinations made to determine, if possible, the causes of the present unpleasant conditions of the local water supply. The evidence submitted shows that there are no unusual factors in the present problem. Algæ similar to those which caused the unpleasant conditions of the Brooklyn water supply two summers ago have been found in numbers far exceeding the usual ratio. The most reprehensible of these are *Asterionella formosa*, *Melosira varians*, *Coelcospherium* and *Anabaena*. *Melosira* and *Coelcospherium* are especially abundant. Both of these last named organisms are known to develop odors and taste, the former, oily, the latter, sweet and grassy. *Asterionella* is usually credited with a distinctly fishy and disagreeable odor. The causes, therefore, of the present conditions are probably these algæ, which in varying proportions give the peculiar character to the water. The unusually warm fall may account in some measure for their excessive development, or, perhaps, the diminished amount of water stored in the reservoir. Opening up of mains may be in part responsible. Cold weather will probably cause their diminution, if not their disappearance.

Boiling the water will be of little or no service. The oils will be thereby only more thoroughly commingled with the water. Filtration may remove a few of the organisms, but not dispose of their oils. The only thing to do is to wait. Time is necessary to determine the causes of the unusual development of these organisms and give the key to prophylaxis. It may further be asserted that there is nothing harmful in the water supply, although a draught of cold water does not now possess its old-time associations.

TUBERCULOSIS IN TAILORS.

The fact that tuberculosis is extremely prevalent among tailors, especially the cutters, has long been well known and of great interest to clinicians. The sedentary nature of the occupation and the crowding which as a rule prevails in the

workrooms have usually been held responsible for this unusual prevalence. Recent observations, however, seem to discredit in part such etiologic factors in this connection. It has often enough been shown that individuals following other trades, but living under equally crowded conditions, may show comparatively a much greater insusceptibility. Observations of this kind have led many to believe that the high tribute paid to tuberculosis is referable to other factors than solely to overcrowding.

Repeated investigations of the local conditions lead to the conclusions that direct contamination by infected sputum constitutes the most menacing factor in its spread.

In support of this conclusion attention may be called to the fact that in all tailoring establishments, if much work is going on, there is a fine but noticeable dust present in the workroom consisting chiefly of the minute particles of the woolen clippings. The clippings themselves are thrown into barrels, there to remain for a few days until these are full, when they are thrown into bins or large receptacles placed not far away. They are left here, as a rule, for a few weeks until sold and taken away to be woven into what is known as "shoddy." This in turn is sold to dealers handling inferior grades of cloth or goes back to the original merchant as a second-rate article. Before it is resold, however, it is dyed. If this dyeing process is germicidal existing tubercle bacilli in the "shoddy" will be exterminated and the cutters who handle it will not be subjected to infection. If, however, the dyeing process does not kill the organisms, there is thus afforded a means of infection, if the original scraps were primarily contaminated. That this is the case seems undoubted, for the following reason: In tailors' shops, as in most other places, cuspidores are provided, the employers and managers particularly requesting that they be used; as a matter of fact they are largely neglected, while the barrels and the contents of the same receive the expectorations. When it is remembered that in these places as in all large factories there are usually some tuberculous employees, generally, although not always, in the early and undetected stages of the disease, a clear chain of evidence is established, provided that the dyeing of the goods does not destroy the tubercle bacilli.

Even if the organisms are thus rendered innocuous, there still remains a certain and evident means of infection in the contaminated contents of the barrels and bins, since, the sputum being dry, the emptying of the clippings into the bin itself or into intermediate receptacles permits of a thorough dissemination throughout the room. Again, the removal from the bins at a later date necessitates a still further shaking up and the liberation of untold numbers of minute particles of infected wool. The same barrels after being emptied are used and used again, and it is evident that, no matter what precautions for health have been taken in the surroundings of the workroom, they must still be dens of infection as long as surreptitious expectoration into the barrels takes place, as it undeniably does. The men disobey the requests of their superiors and are not cognizant of the gravity of their action.

It would seem that this matter is a suitable one for the interference of our vigilant Board of Health. The remedy, of course, lies in the proper use of cuspidores, but in view of human frailty and the close proximity of convenient barrels we must rely upon proper sterilization of the clippings. If this is impossible for commercial reasons, then it would seem that they should be destroyed.

PRIMARY SPLENOMEGALY.

Under various names—primary splenomegaly, primary epithelioma, and endothelioma of the spleen—has been described a most remarkable disease characterized clinically by a slow, progressive enlargement of the spleen, beginning in childhood, followed by an increase in the size of the liver. Concomitant with these changes will be found a simple anemia.

Since the thesis of Gaucher nearly two decades ago the condition has passed almost unnoticed. Until the appearance of a recent paper by Bovaird (*American Jour. Med. Sci.*, Oct., 1900) no systematic clinical and pathological study has been made by the half dozen or less observers who have written on this subject. From his own careful studies of two cases in children taken in connection with those already published, this author has been able to give us a fairly definite clinical picture which may serve in the recognition of this interesting condition.

From the facts at hand it is clear that the etiological factors are far from being clearly understood. The affection begins insidiously without fever; attention is first fixed upon the increasing splenic tumor and simple anemia. Later the liver becomes enlarged, and in some cases as

those reported by Bovaird slight enlargement of the superficial lymph-nodes may occur. Certainly if any conclusions are to be based upon the cases already reported the prognosis is to be regarded as unfavorable, although the course of the disease may cover many years.

The general resemblance of such cases to those of splenic anemia has been noted. The age of the patients, or better, the age of the patients at the beginning of the splenic enlargement; the persistent progressive character of the malady; the chronicity of the affection; the enlargement of the liver; the huge size of the spleen; the familiar distribution—all these are considerations of the highest diagnostic significance in the differentiation of the affection from the so-called splenic anemia of adults. Some cases grouped under the latter head may possibly have been primary splenomegaly; post-mortem investigation alone will be found necessary to make clear the real nature of the trouble in many instances.

Few subjects in pathology possess the same real interest which centers around the microscopical findings in the organs removed from these cases. The extensive endothelial hyperplasia observed in the spleen and to a less extent in the lymph-nodes and liver has already brought forward some discussion. All the writers thus far, with the exception of Bovaird, have either regarded the lesion epithelioma, carcinoma or endothelioma. But if we accept the definition of a tumor as an autonomous growth as laid down by Thoma then we cannot, as Bovaird very rightly points out, regard these cases of endothelial splenomegaly as instances of tumor growth. The evidence, moreover, scarcely admits the interpretation as metastases of the proliferative changes in the lymph-nodes and liver.

It is not at all unlikely that further investigation may show the infectious origin of these cases.

ECHOES AND NEWS.

NEW YORK.

Why Gouverneur Hospital is Slow in Building.—There has been considerable criticism because of the delay in opening the new Gouverneur Hospital, the construction of which began five years ago. It has been explained that the law requires that all the furniture for the hospital shall be made in the State's prisons and the prisons have been slow in fulfilling their contracts.

Typhoid in Upper New York.—Press dispatches report that typhoid is common in a very severe form throughout the north end of Manhattan Borough, as well as the Bronx. Uptown hospitals continue to take care of more than their usual quota of cases, but the mortality is not high. Thus far the MEDICAL NEWS has been unable to substantiate the press reports.

New York Pathological Society.—In the death of Dr. Lewis Albert Sayre the New York Pathological Society loses the last of the members who brought it into existence. The first meeting of the Society was held in Dr. Sayre's office on June 14, 1844, Drs. George A. Peters and Middleton Goldsmith participating in the formation of the new society. Dr. Sayre kept his interest in the society alive, occasionally attending its meetings, until the end of his professional activity. It is with a special sense of loss that the Society sees fade from its list of active members this illustrious name, enrolled at its first meeting when "the oldest pathological society in the world," as he was fond of saying, was created.

The New York Pathological Society now records upon its minutes the death of Dr. Lewis Albert Sayre, and adopts the following resolution:

Resolved, That the sympathy of the New York Pathological Society be extended to the family of Dr. Sayre in their bereavement, and that the above testimonial be published in the current medical periodicals.

(Signed) W. P. NORTHRUP, M.D.,
JAMES EWING, M.D.,
E. K. DUNHAM, M.D.

Charitable Bequests.—By the will of Abraham Wolff the following institutions were benefited: Hebrew Benevolent and Orphan Asylum Society of New York, $5000; the Home for Aged and Infirm Hebrews of the City of New York, $5000; Mount Sinai Hospital, $1000; the Montefiore Home for Chronic Invalids, $1000; the Society for Preventing Cruelty to Children, $1000; the Colored Orphan Asylum, $1000; the Hebrew Technical Institute of New York City, $2500; the Educational Alliance of New York, $3000; the German Hospital of New York, $1000; the Hebrew Infant Asylum, $1000; the Children's Aid Society, $1000; the New York Cancer Hospital, $5000; the United Hebrew Charities of New York City, $10,000; the Edenkoben Hospital in Germany, $2500.

Tenements and Tuberculosis.—The Tenement-House Commission held its first public hearing in New York City at the United Charities building, Twenty-second Street and Fourth Avenue, last Tuesday. The subject under discussion was "The Relation of Tuberculosis to the Tenement-House Problem." It was the unanimous sentiment of the speakers that with the proper kind of tenement-houses, houses which would make it possible for the tenants to get plenty of sunlight and air and to keep clean, and with the proper supervision and care by the City of those afflicted with the disease, tuberculosis could event-

ually be entirely stamped out. Dr. John H. Pryor of Buffalo, who was chairman of a committee to investigate tenement-house evils in that city, said that in Manhattan alone there were constantly 20,000 persons suffering from tuberculosis of the lungs in its various stages. In his opinion the majority of tenement-house dwellers had some form of tuberculosis. One reason for its great prevalence was that no proper care was taken of the victims. There were accommodations for 1000, whereas 20,000 had the disease. The result was that the infection constantly spread. He said it was the only disease which did not receive proper care.

"The disease is curable," Dr. Pryor declared. "People die of it because they are poor. That's putting it bluntly, but it's true. If they had the means to get away in the early stages of the disease and get proper treatment they would get well. The public has come to look on the disease as hereditary. This is not true. There are but two cases on record where it has been transmitted in this way. The tendency may be transmitted, the inability to resist it readily, but not the disease. Six thousand persons die yearly in New York of tuberculosis of the lungs. This could be checked very readily if officials had the power to change conditions in the tenements and put the afflicted people where they could be cared for." Dr. Pryor favored making it compulsory that every occupant of a tenement have 600 cubic feet of air, that no tenement be allowed to be built on a 25-foot lot and that the people should be educated as to how to prevent infection.

Dr. Herman M. Biggs, of the Health Department, presented maps of various tenement house blocks showing the prevalence of tuberculosis in certain infected and insanitary houses. He said that the death-rate from tuberculosis had been decreasing owing to the improvement in general sanitary conditions, the improvements required in tenement houses and the inspection and corrective measures of the Health Department. He declared, however, that the department did not have enough inspectors. He thought there should be a corps of at least forty medical inspectors, whose work should be exclusively devoted to tuberculosis. He also urged that it was an imposition to increase the cost of tenements by compelling increased measures against fire when fire did not cost more than forty lives a year. He believed it to be a serious error to restrict the height of tenements. "The problem before which all else gives way," he said, "is to furnish cheap homes, that shall have light, air and ventilation. The chance of death by fire is infinitely less than by disease. If the proper measures are taken I have no doubt that the disease can promptly be stamped out." Dr. Biggs also urged that all walls in tenement houses be painted instead of papered, and that no carpets be allowed in the halls. When asked if he meant this to apply to apartment houses he said that it would be better if it did.

Manager Fränkel of the United Hebrew Charities Association said that 3 per cent. of the applicants for aid to his Society had tuberculosis, contracted after their arrival in the United States. He thought it came from overcrowding, because the same percentage exists in Philadelphia where there were no tenements. There, he said, the poor Jews herded in three-story houses just as they do here in the tenements.

Dr. Anna Daniel of the New York Infirmary for Women and Children was of the opinion that the manufacture of clothing in tenements was a grave source of reflection. She knew many victims who worked on clothing up to the day before they died. The garments were often used for bedding, and they went out thoroughly infected with the bacilli of tuberculosis. She was opposed to high tenements, as were also Dr. Alfred Meyer and Dr. S. A. Knopf. They thought high tenements made the lower stories damp and dark and unfit for human beings to live in. None of those testifying believed that tenements should be permitted on 25-foot lots.

Craig Colony.—A pathologist with a salary of $2500 per year has just been allowed the Craig Colony for Epileptics at Sonyea, N. Y.

Dr. Markoe Celebrates His Golden Wedding.—On November 20, 1900, Dr. T. M. Markoe, Emeritus Professor of Surgery at the College of Physicians and Surgeons (Columbia), received a number of friends in honor of the fiftieth anniversary of his marriage. There was also present a committee from a musical club that has met uninterruptedly at Dr. Markoe's home for more than half a century. Both of Dr. Markoe's sons are, like their father, prominent members of the medical profession of New York City.

University and Bellevue Hospital Medical College Bulletin.—At the November meeting of the New York University Medical Society, a report of the Committee on a Bulletin appointed at the October meeting was accepted and referred to the Faculty for approval. This report planned for the establishment of a Bulletin to be issued four times annually, to be called *The New York University Bulletin of the Medical Sciences* and to be edited by a Committee of the Society under the business management to be designated by the university. The contents of the Bulletin are to be: (1) Original articles directly contributed to the Bulletin. (2) Abstracts or *extenso* reproductions of articles originally published elsewhere. (3) Short communications made at the meetings of the Medical Society. (4) Brief minutes of those meetings. (5) Reports on methods devised or tested in the departments of the medical college. (6) A reference list of publications by those connected with the medical college.

PHILADELPHIA.

Sun Porches at St. Joseph's Hospital.—New sun porches at this hospital have just been completed.

They are in the rear of the hospital and are 200 feet in length. Arrangements for heating make them available during the winter.

Experiments in Sewer Gas Destruction.—A station has been erected at Roxborough for the purpose of making experimental tests in the destruction of sewer gas. The results of the tests thus far are reported to be satisfactory.

Reception to Dr. Osler.—The Faculty Club of the University of Pennsylvania entertained Dr. William Osler of Baltimore at dinner Thursday evening, November 15th. The dinner was followed by an informal reception at the clubhouse.

Philadelphia Hospital Ambulances at the Disposal of the Police.—By order of Dr. Shoemaker the ambulances of the almshouse will in the future be sent for cases heretofore taken by patrol wagons. This, it is stated in the order, will not only save the making of long trips by the patrol wagons, but is also a more humane and proper way of conveying people to the hospital.

Increase in Death-Rate.—The low mortality of the past week has been ended by an increase of 70 in the number of deaths for the week ending November 17th. Diphtheria is not abating, 160 cases and 21 deaths being reported. In Camden there were 119 cases, the greatest number in the history of that city. The spread of the disease there is charged to the non-reportal of cases which has thus prevented the necessary quarantining.

Dr. S. Weir Mitchell Honored by Fellow-Townsmen.—Dr. Mitchell was the guest of honor at a reception given at the Penn Club Saturday evening, November 17th. A feature of the reception was that the gathering of 500 persons was largely made up of non-medical men. There were present many distinguished representatives of the pulpit, the bench and bar, and the business community. When a young man Dr. Mitchell spoke to Oliver Wendell Holmes about his desire to take up writing as a profession. He was advised by the "Autocrat of the Breakfast Table" to stick to medicine, make a success of that and then later in life return to the field of letters. Dr. Mitchell accepted with gracious modesty the congratulations which were bestowed upon him for achievements in the two professions which he had hesitated between years before.

University of Pennsylvania Alumni.—The Philadelphia Alumni Society of the Medical Department of the University of Pennsylvania held a symposium, Saturday, November 17th, at the Bourse. Dr. J. Madison Taylor, President of the Society, officiated as chairman, and the evening was delightfully spent with song and story. A banquet was served previous to the literary entertainment. The speakers all described the changes that had been introduced in teaching their several branches of medicine and surgery. Provost Charles C. Harrison was well received, as was also Dr. Egard F. Smith, Vice Provost. Dr. William Draper Lewis spoke for the department of law; Dean John Marshall, for the department of medicine; Dr. Essig, for the department of dentistry; Dean John W. Adams, for the department of veterinary medicine; Stewart Culin, for the department of archeology, and B. Franklin Stahl, Corresponding Secretary, who spoke for the General Alumni Society. Among the physicians present were Dr. De Forrest Willard, Dr. Roland G. Carter, Dr. Alexander C. Abbott, Dr. Mordecai Price, Dr. J. P. Crozer, all of Philadelphia; Dr. Henry Beates, President of the State Medical Examining Board; Dr. J. L. Forwood, of Chester; Dr. H. C. Whitcomb, of Norristown; Dr. Guy Hinsdale and Dr. Frank Elder of Philadelphia.

Typhoid in Pennsylvania.—Typhoid fever has become epidemic in Cementon, a town on the Lehigh River not far from Allentown. Of 200 families composing the population, there are one or more cases in 118 families. Of 22 families, all members from the father down to the youngest child are prostrated by the disease, which has now been raging two weeks. There have been several deaths during this time and the condition of many is reported to be critical. The cause of the epidemic is believed to rest with the town's water supply which has been taken from the Lehigh River. From the evidence already secured it would seem that the river is a stream of contagion distributing its poison over a wide area and seriously threatening other towns below Cementon which also get their water supply therefrom. The populous towns of Catasauqua, Bethlehem, Allentown and Easton are all on the Lehigh, and there is said to be typhoid in these towns also.

School Physicians Organize.—The visiting physicians of the schools of the city are at variance as regards the advisability of asking remuneration for their services. At the last of several meetings held for consideration of the subject a permanent organization was decided upon. Although there was much opposition, a committee was finally appointed to ask Councils for an appropriation to pay each physician a salary of $50 per month. The majority of the women physicians antagonized this action. It is feared by some of the 200 visiting physicians that efforts to secure salaries will lead to the abolition of the visiting staff. The late move of the Board of Education in this direction was stopped before application was made to the City Councils.

The Registration of Tuberculosis.—The meeting of the County Medical Society, November 14th, was devoted to a discussion of this subject. Dr. Hermann M. Biggs, of the New York Department of Health, was the guest of the Society and read the paper of the evening. Dr. Biggs discussed in an impartial manner the good and bad points of registration and gave the results of his twelve years' experience in the sanitary problems involved. Statistics have been quoted so often that the people, the Legislatures, the

sanitary authorities, and even the medical profession are becoming indifferent to the vast expenditure of money, suffering, and death. Dr. Biggs maintains that notification does not involve any publicity that did not previously exist. The increasing knowledge among the laity regarding tuberculosis will subject the consumptive to as great hardships as will notification. Measures differing essentially from those enforced in the acute contagious diseases should be adopted. Tuberculosis should be declared to be an infectious and communicable disease, and treated alone or in a class including typhoid fever and perhaps some other diseases. To properly deal with tuberculosis, sanitary supervision in every municipality should comprise: (1) Compulsory notification; (2) suitable plans for the education of the people; (3) a complete and efficient scheme for the disinfection or renovation of premises vacated by death or removal; (4) a hospital equipment; (5) the power of compulsory removal and retention of patients in a hospital when necessary, in the same manner as is practiced in the contagious diseases. Dr. Biggs closed his admirable address by stating that there had been a reduction of more than 35 per cent. in the mortality from the tuberculous diseases in New York City since 1886, and that it is his belief that a complete and efficient scheme can be adopted which will further reduce that mortality at least one-third within the next five years.

In the discussion of the subject City Bacteriologist Abbott stated that compulsory notification would engender no publicity, the purpose being to acquaint a central power with the location of the foci of disease in the city. Dr. Meigs opposes registration for two reasons: First, it is not successfully carried out, and, secondly, even if it were in every case, there would not be an adequate return for the work involved. He believes there is a difference in the results of precautions against the disease as claimed by laboratory workers and Boards of Health and the practical results seen by physicians. Dr. Flick, in the interests of the Free Hospital for Consumptives, has visited the homes of several hundred poor consumptives where communication of the disease is unavoidable because of the surroundings. Long continuance of the disease in these quarters makes it almost as virulent as smallpox. Dr. Ott stated that if compulsory notification were in force those physicians who adhere strictly to it would lose patients because of their known actions. This would cause evasion of the law and is an obstacle to be overcome.

The general sentiment of the Society was strongly in favor of registration, and a resolution was passed asking the Bureau of Health to class tuberculosis as a transmissible, notifiable disease and to take measures for its prevention.

CHICAGO.

Chicago Drainage Canal.—This great channel has not only purified the drinking-water supply of the city, but it has also given purer water than before to every city along the Illinois and Mississippi Rivers as far as St. Louis. The water in the canal, in the Desplaines River, and in two other rivers is purer from one end to the other to-day than it was a year ago before the canal was opened.

Chicago College for Nurses.—A college bearing this name has been founded, with the intention of training women in all duties of skilled nurses, without requiring two years of bondage in hospitals and training schools.

Board of Education.—In view of the excellent results of medical inspection of schools last year, Dr. W. S. Christopher, a member of the Board, wants the inspection of both public and parochial schools placed under the care of the Health Department.

Maurice Porter Children's Hospital.—This hospital, founded by Mrs. Julia F. Porter in 1882, began with eight beds and for twelve years was supported entirely by Mrs. Porter. Mrs. Porter later decided to extend the work beyond her individual charity and found a large free hospital for children suited to the needs of this great city. The hospital is absolutely free; there are no pay patients whatsoever. It undoubtedly will be greatly enlarged and its usefulness extended. The expenses of the hospital are met in part by an endowment of $3000 a year by Mrs. Porter, two endowed beds, and several annual contributions. The rest must be raised by private subscription and by an associate membership.

Augustana Hospital.—During the years 1884-1900 7051 patients were treated, representing 18 nationalities, 19 creeds, and 22 States. The total indebtedness is $49,436.90, incurred when the location was purchased, and when the new hospital building was erected. The institution has room for 125 patients, is supported partly by paying patients and partly by donations and collections from churches.

A Temperature of 127° F.—Robert Bruce, lately returned from service in the Ninth Infantry in the Philippines and China to Chicago, is reported to have this high temperature. Several days ago Bruce entered the City Hospital and asked for treatment. When the house physician took his temperature, and found it to be 112° F. and the patient showing no sign of early dissolution, he was astonished. The next day it was found that the clinical thermometer had not sufficient range. Other physicians were summoned and a Government thermometer applied, the mark of 127° F. was registered, and for several days in succession Bruce's temperature has reached this point. It is reported that Bruce's pulse does not go up in proportion to his temperature. An explanation given as to Bruce's condition is that a bullet which pierced his mouth lodged in the heat center of the brain.

Lupus Healed by Means of Roentgen Rays.—At a meeting of the Chicago Medical Society, held November 14th, Dr. W. A. Pusey demonstrated this case. The patient was a woman, thirty-eight years old, otherwise in fair health, without history of any sort of preceding eruption. Family history tuberculous. The diseased area involved the left cheek, the left side and front of the neck, the lips at the left angle of the mouth, and the chin, and extended up on the right cheek beyond the angle of the mouth. The disease was of four years' duration and had steadily progressed. At the time treatment was begun there was an active lupus area, with characteristic ulcers covered with reddish crusts and thick, band-like scars in which there were at many points recurrent ulcers and lupus nodules; characteristic tubercles were to be seen at many points. Tubercle bacilli were found in sections of tissue taken from the border of an ulcer. The patient was put under treatment with Röntgen rays on May 8th, and, with the exception of six weeks when there was no treatment, had almost daily exposures until November 14th. The only other local treatment was the use of boric-acid vaseline while the surface was freely ulcerating. Internally the patient took a pill of reduced iron, arsenous acid and strychnine, three times a day, during the month of October. Beginning May 8th the exposures were made daily until May 26th. After May 26th daily exposures were interrupted by intervals during which there was no treatment, the exposures always being temporarily stopped on the development of slight dermatitis. Within two weeks after the beginning of treatment the ulcers were cleaning up and improvement after that time was continuous. The last lesions had entirely disappeared by October 8th. An interesting observation was that lesions which did not receive the full effects of the rays required extra exposures for their healing. No new lesions have appeared and at the present time it is impossible to find active trace of the disease. The scars resulting are soft, flexible and white, confirming the claims of other observers. The thick lupus scars which existed when treatment began have shown under the exposures great improvement in flexibility, softness and color. The case was presented as one healed by exposures to Röntgen rays. It was admitted that whether it is a complete cure or not can only be determined by the lapse of time. It was pointed out that there were at least no evidences of disease remaining and that even should more or less recurrence of the lupus take place the result might still be called extraordinary.

GENERAL.

Riot in a Medical School.—There was a riot at the Omaha Medical College November 15th, in which a hundred students participated. Two students were seriously injured, one perhaps mortally, and a dozen others were more or less hurt.

Plague in Cape Colony.—The bubonic plague has broken out among the natives near King William's Town, twenty-eight miles northwest of East London, Cape Colony. Three deaths have already occurred.

President of Johns Hopkins Resigns.—Dr. Daniel C. Gilman has sent in his resignation as president of this university because of advancing years. Dr. Gilman is now nearly seventy years of age. His resignation it to take effect February 22, 1901.

Chinamen and the Plague.—Over 5000 Chinamen have just returned to San Francisco from the fisheries, canneries and other industries on the western coast. According to reports many of these Chinamen are greatly emaciated and weakened by hard work and poor feeding. There is fear that they will contract the bubonic plague when they get back to Chinatown.

Doctor and Automobile.—Dr. Francis H. Munroe, of Newark, N. J., was said last week to be recovering rapidly from injuries received in an automobile accident.

Rabbits and Diphtheria.—Newspaper reports say that the town of Grafton, Ill., is undergoing an epidemic of malignant diphtheria, which physicians believe was communicated to persons by rabbits. A great many rabbits have infested the country surrounding Grafton this fall, and the hunters put them on the market at prices so cheap that they were used largely as food. Within the last week hundreds of dead rabbits have been found near the town. It is said that the local practitioners became convinced that the rabbit flesh was responsible for the illness and caused microscopic examination, which proved that the rabbits found dead had succumbed to diphtheria.

St. Louis Academy of Medical and Surgical Sciences.—At the last meeting of this Society the following officers were elected for 1901: President, Dr. Emory Lanphear; Senior Vice-President, Dr. Carl Pesold; Junior Vice-President, Dr. H. S. P. Lare; Secretary, Dr. O. L. Suggett; Treasurer, Dr. G. M. Phillips; Orator, Dr. Wm. Porter; Librarian, Dr. H. G. Nicks.

Yellow Fever at Natchez.—The latest advices from Natchez report that at a conference of nearly all the physicians of the city November 9th it was stated that 12 cases of yellow fever with 7 deaths had occurred since about the middle of October. There were 5 known cases on the 9th, 2 new on the 8th. Local authorities say they will isolate and guard cases and suspects and make post-epidemic disinfection. Local conditions favor the control of the disease. The weather is cool, bright and clear.

A Physician Vindicated.—Adelbert Swartz, of Indiana, convicted of the murder of his brother-in-law and given a life sentence in the penitentiary at Jackson, Mich., in 1895, will be liberated within thirty days. Proof of his innocence has

come to light, and the Pardon Board has recommended his release.

Intemperance in Russia.—The Government is displaying great interest in the temperance movement. The Minister of Justice has transmitted to the commission appointed to reform the penal code a proposition emanating from the National Hygienic Society to forcibly detain confirmed inebriates in hospitals.

The Denver College of Medicine.—This institution, prominent among the smaller medical colleges, enters upon its twenty-first session with the best class of students in its history. Its laboratory facilities are greatly amplified and its clinical advantages materially improved. The department of pathology and histology has been placed under the care of Dr. J. A. Wilder, that of anatomy under the care of Dr. S. B. Childs.

Suicides and Homicides in the Army.—Surgeon-General Sternberg has prepared statistics making a comparison of cases of suicide and homicide which occurred in the Army during the years of 1898 and 1899 compared with the ten years between 1888 and 1897. Revising our report of the 17th inst., the statistics show that there were relatively fewer homicides during those two years than during the previous decade. The average number of suicides per year in an army of 27,116 for the ten years was 17, equal to a ratio of .63 per thousand. The strength of the Army in 1898 is given at 147,795, the number of suicides 38, and the ratio per thousand .26. The strength of the Army in 1899 is given at 105,546, the number of suicides at 30; ratio per thousand .28. During the ten years from 1888 to 1897 the mean annual number of homicides is given at 5.5, the ratio per thousand being .20. For 1898 the number of homicides was 19, and the ratio per thousand .13; for 1899 the number of homicides was 23, giving a ratio of .22 per thousand men.

Yellow Fever in Nicaragua.—*El Comercio* of Managua, Nicaragua, in its issue of October 18th, declares that yellow fever is prevailing in the city of Leon, near the Pacific port of Corinto, to an alarming extent, and that the disease is of a very dangerous type.

Yellow Fever and Santiago.—According to *The New York Times* this city has been rid of its yellow fever. It says: "The yellow-fever epidemic at Santiago in 1899 resulted in a death-rate of 20 per cent. of all who contracted the disease. This comparatively low rate was only obtained through the great moderation of the disease toward the end of the season, when the force of the storm had spent itself. Of the first seven men who were taken to the yellow-fever hospital but two recovered. General Wood was absent in the North when the epidemic began. It raged without abatement until his return, when he took prompt measures to quench the fires by removing the fuel on which they fed. Within a few hours every American soldier in the city was on his way to the mountains; department headquarters were removed to a safe village at a high altitude, and prompt isolation of suspicious cases and disinfection of houses they had occupied were made. All American bars were closed and other liquor-shops were forbidden to sell to Americans. All non-immune loiterers about saloons were isolated and disinfected as if they had been exposed to the disease. Hotels and lodging-houses in which cases had occurred were closed. Quarantine measures were strictly enforced, and non-immune passengers were not permitted to land in Santiago until late in the autumn. The disease soon began to wane. By the middle of October department headquarters were able to return to the city. The result of two years of American rule had been to make Santiago, to all outward appearances, as clean as any American city. A medical officer of the army, as Sanitary Inspector, has made a house-to-house inspection throughout the city. The Colonel has had the cooperation of the city authorities, who have made it a misdemeanor, punishable with fine and imprisonment, to resist this inspection or to fail to carry out the resulting orders. Where poverty prevents compliance with orders to clean up the work is done at the public expense, but, public or private, the work has to be done. Every house where yellow fever occurred last year has been disinfected three times. Eighty-five miles of streets in Santiago have been swept daily, and 25,000 cubic yards of sweepings have been hauled out of the city during the year. One hundred and eighteen thousand cubic yards of garbage have been removed, in the destruction of which 35,000 gallons of crude petroleum have been used. Four thousand gallons of carbolic acid and 11,000 pounds of chloride of lime have also been employed in the same work. A Board of Health, organized by Colonel Whitside, advises on all sanitary matters within the city and collects vital statistics. Any case of contagious or infectious disease reported is at once examined by three members of the Board, and no case is officially recognized except when the diagnosis is agreed on by a majority of the Board. A strict quarantine is maintained against towns where yellow fever is known to exist, and from which people may reach Santiago within the detention period of five days. Detention camps are organized for the observation of suspicious cases. The result of this work is that there has been no fever in the city since last December. Had fever come in spite of all that was done, everything was organized to take care of it. Its banishment from this city, its favorite habitat for three or four hundred years, has been accomplished by American cleanliness and energy, intelligently directed by military authorities, and its absence has been neither freak nor accident."

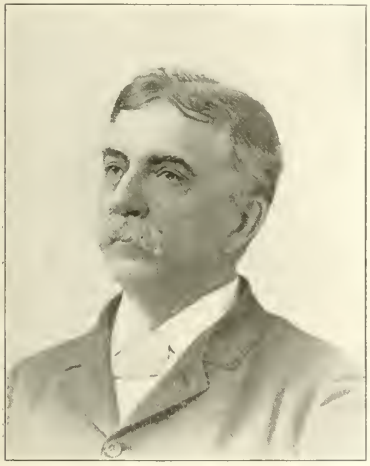
The excellent showing reflects great credit on the administration if further reports are corroborative.

OBITUARY.

HORACE TRACY HANKS, M.D., LL.D.

Dr. Horace Tracy Hanks died at his home, No. 766 Madison Avenue, of nephritis, Sunday, November 18th, after an illness of one week. He was born in Vermont in 1837. After two years at the University of Vermont and some winters' teaching in the public schools of East Randolph, Mass., he entered the Albany Medical College, from which he was graduated in 1861. He served in the Union Army as assistant surgeon with the Thirtieth New York Volunteers. In 1863 he resigned and went to Royalston, Mass., where he practised for a year, and then removed to New York in 1865.

Dr. Hanks was gynecologist at the De Milt



Horace Tracy Hanks, M.D., LL.D.

Dispensary from 1872 to 1882; assistant surgeon at the Woman's Hospital from 1875 to 1879, and surgeon since the latter year. Since 1885 he had been professor of diseases of women in the New York Post-Graduate Medical School and Hospital. He was also consulting gynecologist to the Northeastern and Judson Dispensaries and to the Tarrytown Hospital.

Dr. Hanks had a marked and high order of mechanical originality which was utilized in the construction of new instruments, many of which are now in use. He was also largely engaged in interests outside of his medical work and his social engagements were numerous. He was a member of the Republican and Quill Clubs, the Society of Medical Jurisprudence, the Sons of the Revolution, Lafayette Post of the G. A. R. and the New England Society.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, November 14, 1900.

SCANDAL AT THE NATIONAL HOSPITAL FOR THE PARALYZED AND EPILEPTIC—APPOINTMENT OF A COMMISSION OF INQUIRY—LETTER OF SIR WILLIAM BROADBENT—PRECAUTIONS IN LONDON AGAINST THE PLAGUE—MR. JAMES CANTLIE'S DESCRIPTION OF THE DISEASE—THE RETURN OF THE CITY IMPERIAL VOLUNTEERS—MANY CASUALTIES IN WITNESSING THE PROCESSION.

The conflict between the board and staff of the National Hospital for the Paralyzed and Epileptic, of which I advised you some time ago, still continues. It may be remembered that the staff alleged that grave defects existed in the administration—an insufficient supply of nurses and improper dieting of the patients—and made the very modest request that they should be allotted two seats on the board, pointing out that such an arrangement would render impossible the existence of the evils mentioned. The board adopted an unreasonable and overbearing attitude and refused this request, giving as a reason that the conduct of one of their medical officers might at some time have to be called in question before the board and that he might, therefore, be placed in the anomalous position of sitting in judgment on himself. To this weak argument I have already replied. Finding protests useless, the staff has through the press brought the matter before the public and the board has at last been compelled to consent to an inquiry by an independent tribunal. In *The Times* a controversy has been carried on for several months in which many of the leading consultants of London have taken part. Sir William Broadbent treats the subject in a very trenchant manner. The public, he says, scarcely realizes the issues which are at stake. The demand that two representatives of the staff should have places on the board conveys a totally inadequate idea of the importance of the question involved. It is put forward as a means of redressing grievances which have become intolerable. The physicians and surgeons of a hospital have their minds too fully occupied with the care of the patients to desire to take part in the administration of the institution, so long as their instructions are carried out. In no department of medicine are the problems of disease more difficult and absorbing than in neurology and nowhere has better work been done in their elucidation than at the National Hospital. How grave must be the matter, then, which could provoke a unanimous protest from men engaged in such studies! The staff of the National Hospital occupies an exceptional position. Most hospital physicians and surgeons owe at least as much to their hospital in opportunities

and reputation as the hospital owes to them. But the National Hospital is the creation of the distinguished men who form its staff. No other institution can present such a galaxy of names absolutely in the front rank. Buzzard, Bastian, Gowers, Brundell Carter, Ferrier, Semon, Hughlings Jackson, to go no further, are known all over the world. These are the men who are brought to the verge of collective resignation by a board quite incompetent to give any opinion on their complaints!

As a precaution in case plague should invade the metropolis the London County Council has had written a pamphlet containing a concise description of the disease by Mr. James Cantlie, formerly medical officer in one of the plague hospitals in Hong-Kong and Dean of the Medical College of Hong-Kong. A copy of this pamphlet has been forwarded to all the practitioners in London to assist them in the diagnosis of the disease. The Council has also engaged the services of Mr. Cantlie to visit any person in London suspected of suffering from the disease. Any medical man can avail himself of these services by simply applying. As very few practitioners have ever seen a case of plague this arrangement must prove a great boon in cases of difficulty. But thus far only one doubtful case has occurred and this turned out not to be plague. Mr. Cantlie points out that in former times the word plague was applied to almost any epidemic, but in recent years it has come to designate a specific disease. He recognizes 8 types, *viz.*, (1) bubonic, (2) septicemic, (3) pneumonic, (4) nervous, (5) fulminant—in which the patient quickly collapses and dies within twenty-four hours, (6) puerperal—in which abortion occurs, (7) pestis ambulans in which the patient goes about and performs his ordinary duties, (8) pestis minor—a mild form which occurs not only when the epidemic is at its height, but for several months (or years) before and for several months (or years) after. The importance of the latter form is that it may precede an outbreak. The symptoms are swelling of an inguinal gland, fever and malaise. The bubo suppurates and discharges by two, three or more fistulous openings. After excision healing takes place in a month and the patient is cured. Plague is spread chiefly by human agency, but rats, body and household parasites, food, drink, and air are all means. The excreta—feces and urine—contain the bacillus. The sputum is the most infectious of all. It is by the vermin in the coat of rats which leave it after death that infection is probably conveyed to man.

The return of the City Imperial Volunteers from the war was witnessed by a throng of people in London, the extent of which has never been exceeded, and was attended by over 1000 casualties of which two were fatal. In several places the police charged with keeping the route clear were overwhelmed by the vast multitude, and quite powerless. At one hospital, St. Bartholomew's, 70 cases were treated of which 13 were retained. They included abdominal and head injuries and cases of fractured ribs. Two men standing on a scaffold fell to the ground and were killed. The scaffold gave way owing to the attempt of a number of persons to climb it.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

ETIOLOGY OF RHEUMATIC FEVER—PHTHISIS AND WIND—ARTHRITIS AND APPENDICITIS—EARLY OPERATION IN APPENDICITIS—ACUTE PULMONARY VALVULITIS—ACUTE ACTINOMYCOSIS—MEDICAL CARE OF GYNECOLOGICAL CASES.

F. J. Poynton and A. Payne at the Pathological Society of London, October 16th, read a paper on the etiology of rheumatic fever which was an epitome of their report *in extenso* of observations and experiments read in June and made up to that time and an additional memorandum of such as have been had since that time. The paper consisted of three parts: (1) The results obtained in the original eight cases with those in the subsequent three new cases of the fever by injecting the diplococcus recovered from all eleven into rabbits. (2) A comparison was made between the lesions in the human being and in the rabbit. (3) An exhibition was given of the microscope slides and a few macroscopic preparations of the lesions caused by this displococcus. The authors laid stress upon the fact that all the cases of rheumatic fever had been very typical and none doubtful The diplococcus had been grown in pure culture in a medium composed of milk and bouillon acidified by lactic acid and then transferred to blood agar. Injected intravenously into rabbits it caused death rapidly by acute valvulitis. The diplococcus was then isolated from the blood and cerebrospinal fluid and cultivated as before. Injected into a young rabbit it caused endocarditis and polyarthritis with much effusion. Local and systemic recovery ultimately followed. This same organism had been found in the bladder after death and in the urine during the course of acute pericarditis. Such injected into rabbits caused pericarditis, endocarditis, polyarthritis, emaciation, pyrexia and death on the twentieth day. There was no suppuration in any of the viscera. Chorea was noted once combined with great nervousness of the animal and at autopsy valvulitis. Their microscopic examinations were not yet completed, but one remarkable fact was recited, *viz.*, when the lesions, especially the pericarditis with effusion, were not marked, a large coccus was recovered with relatively few of the diplococci. The same atypical coccus could be produced by cultivating the diplococcus upon improper media and seemed to indicate changed virulence or chemistry of the organism or both. They appeared as evidence of the subsidence of the lesion. In some cases of malignant endocarditis the converse was found,

namely, very numerous active diplococci. Perhaps relapses in rheumatism might be explained by some latent energy in the large cocci. In conclusion they expressed the theory that in rheumatism there is great local resistance whence is found the evanescent character of the lesions, pericarditis, endocarditis, etc. They have noted large numbers of the diplococci taken up in the bodies of the connective and endothelial tissue cells.

W. Gordon (Exeter) at the Royal Medical and Chirurgical Society recited investigations into the influence of wind upon phthisis in the county of Devonshire and the bearing such would have upon choice of sites for sanatoria for consumptives throughout Great Britain. His plan was first to compute the ratio for each district of the death-rate due to pulmonary tuberculosis to the total number of deaths, on the ground that the latter is usually an index of the general sanitation of a community. Then he proceeded to assign causes for the phthisis where there was an undue number of cases of it. Rainfall appeared to have some influence, for in Tavistock the rain and the disease were both at the maximum, while at Axminster each was at the minimum. Other considerations indicated a common cause for this relation, possibly the wind which brought the rain. It seemed scarcely possible that the geologic conditions of the soil could be a factor. The theory of wind influence upon tuberculosis is not new, but he tested it thoroughly in this shire. He found the lowest mortality in communities where the houses were well sheltered, the greatest mortality where they were much exposed, especially to the west and southwest winds. He did not think that temperature, sunshine and purity of air could have much influence, but regretted that they could not well be reduced to definite computation.

F. J. Poynton at the Medical Society of London, October 22d, discussed the relation between appendicitis and arthritis. The concurrence of these two diseases is not common, but deserves elucidation in order to explain the causes of the appendicitis. Many claim that these may be rheumatic in origin, because of (1) the concurrence of appendicitis and acute articular rheumatism; (2) the occurrence of a polyarthritis resembling an acute rheumatism either during or just after an appendicitis; (3) the favorable reaction in appendicitis to salicylates; (4) the analogy of structure between the tonsil and the appendix. His own view is that this association is not conclusively causal, although both may be cured by the salicylates. It is further very likely that the arthritis in appendicitis may be purely pyemic by metastasis, as is often shown on autopsy. A purulent or gangrenous appendix will have metastases elsewhere pyemic in character, it may be in the lungs, liver, other viscera or joints. Finally, it should be remembered that monarticular lesions in children, like hip affections, even if rheumatic, may on the right side simulate appendicitis and that in pronounced rheumatic attacks in children the abdomen is often the seat of distress.

C. W. M. Moullin at the Harveian Society of London, October 18th, read a paper on the early operation in appendicitis. All attacks of this disease he considers are divisible into three groups: First, those which have a mild invasion, short course, need no operation and always yield to medicinal and dietetic management. They make up by far the greatest number of patients. Second, those who are afflicted by a severe attack; in them the appendix is severely infected, goes on to suppuration and adhesions, abscess or gangrene results. These patients are less numerous than the preceding class, should always be operated on and usually are, but entirely too frequently the treatment is too late. The third series of a case is the peritonitic, where the appendix ruptures prematurely and freely in the general peritoneal cavity. Such patients are often lost notwithstanding early and drastic operation. In dealing with any case of this disease several axioms must be remembered. These are the frequently virulent and rapid invasion and course of the process, the anatomical freedom of the appendix to swing to almost any point of the abdominal cavity and, rupturing, dump its septic contents and set up a furious peritonitis; the deceptive latent possibilities of a case which has had a very mild initiation, but without warning may be modified to an intense course and fatal issue, and, finally, the common experience that an original insignificant attack may be followed by one of early fatality either in itself or in the patient's surroundings which may be far from the reach of skilled surgical aid. In view of these facts the real danger for the patient lies not in the comparatively safe operation of removing the organ while slightly diseased and not adherent, but certainly in delaying to do so. The only symptoms which will serve as guides to the moment of operation are the pulse, temperature, tenderness, muscular rigidity and pain and sense of fulness in the right iliac fossa. With the patient in bed a constant pulse of over 100 or a rise to that level and over is the best single sign. The temperature is by itself less reliable, unless there be a steady rise or a sudden rise. Increase in the pain, tenderness and muscular rigidity is very significant. A sense of fulness or tumor in the right iliac region is pathognomonic. Vomiting and constipation and other symptoms are much less reliable as guides. The absence of any special sign is not solely a reason for waiting. The presence of a rapid pulse, even if other conditions appear quiescent, is full reason for immediate operation. This is still more emphatic if morphine has been administered. The limit of waiting may be arbitrarily put at thirty-six hours, but each case must be decided on its own merits. In some this will be too long: in other cases delay may be properly prolonged. The danger lies in making the error and postponing the operation

till too late. The difficulty lies in distinguishing a severe case at the outset. It is at this period that the operation possesses very little danger and should be known as a truly preventive measure. In view of all the difficulties possible in any case he thinks this immediate preventive operation always justifiable; first, because it has little hazard itself, second, because it is safest to ablate any diseased appendix

T. Churton at the Pathological Society of London, October 16th, showed a specimen of acute pulmonary valvulitis. The child, eleven years old, was perfectly well until she had her first attack of rheumatic fever in her fifth year; in her eighth year she developed pulmonary tuberculosis with hemoptyses and the following year had acute rheumatism with pneumonia. During her last illness a loud rushing bruit was heard in the second left intercostal space and the diagnosis of pulmonary stenosis was made. The autopsy showed vegetations along the valves and marked narrowing. The foramen ovale, ductus arteriosus and septum ventricule were all closed.

D. Duckworth at the Clinical Society of London, October 12th, rehearsed the history of a case of acute actinomycosis in a nineteen-year-old youth. He was admitted September 28, 1899, complaining of pain and swelling in left chest low down. He had had gastric pain after eating for months before admission, but this had passed off. When he came to the hospital he had a temperature of 99° F. and pulse of 100, deficient respiration in the left lower chest with gradually increasing bulging, dulness and absence of breath sounds in the axillary region below the sixth rib, dulness and friction crepitus for four inches behind. The bulging was partly thoracic and partly abdominal and seemed to involve the left lobe of the liver, which was exceedingly tender and displaced by respiration. October 25th the temperature reached 102° F. and 102.8° F. on the 26th. Abscess of the liver was vainly explored for and actinomycosis suggested, but could not be established. At the autopsy actinomycosis of the left lobe of the liver, a softened mass between it and the pylorus and a subdiaphragmatic and left pulmonary abscess filled with ray fungus were found. The source of infection may have been the old gastric ulcer.

H. Smith at the British Gynecological Society, October 11th, deprecated the fact that modern surgical successes had made the operative treatment in gynecology overshadow the medical treatment. There are many conditions in which locally and systemically medicines, diet and hygiene may cure and the dangers of operation be avoided.

Hospital Site Purchased.—The Sisters of the Poor of St. Francis, who conduct the St. Francis Hospital, have bought the plot of thirty-two lots on the east side of Brook Avenue, from 142d to 143d Street. The property will be improved with a hospital building.

SOCIETY PROCEEDINGS.

CHICAGO PATHOLOGICAL SOCIETY.

Stated Meeting, Held October 8, 1900.

The President, Ludvig Hektoen, M.D., in the Chair.

Milk Supply.—Dr. S. E. Munson of Springfield, Ill., read this paper, in which he discussed in particular the relation between milk supply and tuberculosis. The recent literature bearing upon the subject was referred to and the use of tuberculin and the slaughter of cows giving a reaction were advocated.

Dr. W. A. Evans spoke of the various measures advocated for the elimination of tuberculosis from herds of cows, and concluded by advising the killing of all tuberculous cows, as has been urged by Virchow.

Dr. Gehrmann referred to the measures taken by the Chicago Health Department relative to the detection of tubercle bacilli in milk. The examination of a general milk supply for the bacilli has been discontinued, and only the milk from individual cows is tested. The use of tuberculin is always recommended in any case where suspicion is aroused, in preference to the examination of the milk. The detection of pus in milk is considered sufficient evidence upon which to condemn it, even in the absence of tubercle bacilli.

Neuro-Epithelioma.—Dr. Brown Pusey demonstrated specimens of a glioma of the retina. He said the fact that current pathological literature contains several articles on the subject of glioma of the retina has suggested the idea that the members of the Society might be interested in seeing sections from such a tumor. The present agitation on the subject of glioma of the retina undoubtedly is due to the article of Flexner, published August, 1891, and to the book of Wintersteiner, "Das Neuro-Epithelioma der Netzhaut," published in 1897. In these publications particular attention is paid to the "rosettes" found in such tumors. Wintersteiner described the rosette as composed of cells derived from the neuro-epithelial layer of the retina; the wall of the central cavity of the rosette, he thought, corresponded to the external limiting membrane of the retina, with rudimentary rods and cones projecting into the central cavity. Flexner and Wintersteiner, working independently, came to similar conclusions, and from these studies suggested the name *neuro-epithelioma retinae* to replace the term *glioma retinae*. These conclusions have been accepted by many authorities; others have opposed them. Two facts have been particularly hard to explain when considering these tumors as new growths derived from the neuro-epithelial layer of the retina. One is that, according to present views, such highly differentiated tissues do not form tumors; the other is

that the gliomata arising elsewhere than in the eye have very similar rosettes.

The tumor from which the specimens were taken was evidently removed in a very early period of its development. It shows the rosettes unusually well. Especial interest attaches itself to the specimen from the fact that there can be no doubt that the cells of the rosettes of this tumor do in places split up into fibrous tissue—into neuroglia. He thought it would require a great stretch of the imagination to look at some of the sections and then speak of rudimentary rods and cones projecting into the central cavity of the rosette. He believes that the specimens demonstrate that the rosettes are composed of cells which form neuroglia; in other words, that the suppositions of Flexner and Wintersteiner that these tumors are neuro-epitheliomata are incorrect, and that these tumors are, as was formerly believed, true gliomata.

In the discussion Dr. M. Herzog agreed that the tumor consisted of glia cells, and that if blood could be demonstrated in some of the spaces, the picture would correspond to a glioma of the central nervous system.

Castration Tumors.—Dr. H. Duncan demonstrated specimens of these tumors taken from swine, and said that there is a disease of swine characterized by a tumor or growth which, as a rule, appears after castration, occupying the position of the testicle. Similar growths occur, however, in other situations and usually on the breast in the female. A trauma of some kind invariably occurs previous to the appearance of the growth. The clinical history of the disease is briefly as follows: About two weeks after castration a swelling appears at the site of the castration wound. The tumor, as a rule, grows rapidly and in from three to five weeks one or more ulcers appear in the cicatrix. Close inspection shows the ulcers to be the external openings of fistulous tracts from which there is a constant discharge of purulent material—the discharge may be intermittent. Not infrequently the growth acquires enormous proportions as compared with the weight of the animal and in such cases may drag upon the ground. During the early stages the animal thrives, later it becomes cachectic, loses flesh and dies about twelve months after the inception of the growth. The growth is in anatomical connection with the distal end of the spermatic cord. It is in most cases single, but there may be two or more growths on the same side of the scrotum. It consists of a softened center enclosed by a capsule of firm, avascular, white, fibrous tissue. The fibrous tissue merges externally into a loose fibromyxomatous, sometimes edematous, tissue. The form of the swelling is generally round or oval. There may be smaller secondary tumors or nodules in close relation to the primary growth varying in size from that of a pea to that of a hen's egg, having a structure similar to that of the primary growth. More rarely small nodules are strong along th course of the cord. The histology of the growth is uniform and corresponds to the macroscopic appearance, *viz.*, a structureless, neurotic center with an enclosing zone of scar tissue. In sections stained for bacteria the neurotic border is seen to contain numerous organisms, sometimes in enormous numbers. There may be bacilli of varying lengths, threads and cocci. The threads stain uniformly or appear as strings of deeply-staining spores or cocci. Some of the threads branch. In all more than twenty tumors have been examined and cultures under both ordinary and anaerobic conditions have been made. Usually from two to seven different organisms have been isolated from each tumor examined. None of the organisms isolated were virulent enough to kill guinea-pigs. The bacteriologic results were not uniform. A ray fungus was isolated from three of a series of seven tumors. Smears from all of the series show threads, some of which branch. Swine were inoculated subcutaneously with pure cultures of the ray fungus with negative results. A sixty-pound male pig was inoculated by removing the right testicle, inserting a small piece of necrotic material from one of the growths and sewing up the wound. The result was a fairly typical growth at the site of the inoculation. It is interesting to note that the remaining testicle was partly neurotic, partly scar tissue, and a portion external to the growth was comparatively normal. The disease is not infrequent among the swineherds of the Southwest, as Iowa, Kansas, Missouri.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Thirteenth Annual Meeting, Held at Atlanta, Ga., November 13, 14 and 15, 1900.

The Association met in the ballroom of the Kimball Hotel under the presidency of Dr. A. M. Cartledge of Louisville, Kentucky.

Governor Candler of Georgia delivered an eloquent address of welcome, which was responded to by President Cartledge.

Medullary Narcosis.—Dr. W. L. Rodman of Philadelphia in reading this paper asked: Will the method displace ether and chloroform in operations below the diaphragm? No one, he said, however optimistic he may be concerning this new method will think of abandoning ether and chloroform. These trusted agents will continue to enjoy the confidence of the profession, and the Corning-Bier method will be held in reserve for certain cases in which there is seemingly a clear contraindication to chloroform or ether. Medullary narcosis should be given subjects suffering from bronchial, pulmonary, and renal diseases; to patients affected with fatty or dilated heart and cardiac diseases in general. It may also be given to old people in whom the shock of general anesthesia is oftentimes great, and, from its action in one case, the author believes it to be safer

than chloroform or ether in drunkards. The place where the spinal canal is entered is of some importance. Tuffier, Murphy, Matas, and others prefer the fourth lumbar space. In the opinion of the author any of the lumbar spaces can be punctured with safety. The fifth interspace between the last lumbar and the first sacral vertebra is in some respects the easiest route. The author considered the primary dangers of simple puncture without injection. It has not been shown that secondary changes, either inflammatory or degenerative, have taken place in membranes or cord leading to chronic disease. Theoretically, one might fear some form of sclerosis. Simple puncture of the spinal cord, if aseptically done, is unlikely to be followed by serious changes in the cord or its membranes. If to simple puncture is added the injection of some chemical substance by which anesthesia is produced, a new element of danger is undoubtedly incurred. Therefore, the choice of a local anesthetic becomes of paramount importance. Cocaine is difficult to sterilize, as it cannot be boiled without impairing its anesthetic properties. Raised to a temperature above 180° F., it is decomposed into ecgonin and becomes comparatively inert. Some have found it practical to boil cocaine and then introduce it into the spinal canal without impairing its anesthetic properties. By raising it to a temperature of 180° F., and repeating this twice, thrice, even six times, as recommended by Tuffier, it should be sterile, and therefore safe, and yet a dose of thirty minims of a two-per-cent. solution of cocaine is too large. Rodman recommended half of this amount. A small dose of a two-per-cent. solution is better than a larger one in greater dilution. He has reduced the number of minims of a two-per-cent. solution each time he has practised the method, and thus far he has not failed to obtain complete analgesia. In his first case he injected 18 minims; in the second, 15 minims, and in a third, 13 minims, and hopes still further to reduce the amount to 10 minims. One should aim to get complete anesthesia with the smallest amount of the drug. The primary and secondary effects of the injection of cocaine into the spinal canal are those of simple puncture exaggerated. Shock is increased, headache, restlessness, delirium, and other symptoms are necessarily more pronounced. The speaker referred to the method of injection. An iridoplatinum needle was recommended. Blindfolding the patient and filling the ears with cotton to avoid psychic pain are desirable.

Dr. Lewis S. McMurtry of Louisville predicted that medullary narcosis would not take the place of the established methods of anesthesia and that its field of usefulness would be restricted to the class of cases just outlined.

Dr. Willis G. MacDonald of Albany mentioned the case of a man, forty-two years of age, who had suffered from hemorrhoids and fissure of the rectum. The patient had always been a hard drinker. Granular and hyaline casts were found in the urine, also a small amount of albumin. Patient likewise had a fatty, dilated heart. He injected 18 minims of a two-per-cent. solution of cocaine in the subdural space, and when he was about to begin the operation the patient became cyanotic; a profuse, cold perspiration began, so that it became necessary to give the patient one-twentieth of a grain of strychnine, one-twenty-fifth of a grain of nitroglycerin, when the respirations ran up to sixty or eighty. No pulse was discernible at the wrist. The pupils were dilated; patient became unconscious. More than two hours elapsed before the speaker felt safe as to the condition of his patient. The man suffered severely from headache and projectile vomiting during the entire afternoon, and had two or three involuntary movements. Two days later Dr. Macdonald administered nitrous oxide and ether and operated on the hemorrhoids. Patient recovered. During the summer, while on a visit to Europe, he saw a similar experience in the practice of Professor Kocher.

Dr. A. M. Cartledge of Louisville said his experience was limited to eight cases in which he had used this method of anesthesia, the results being satisfactory. In two patients severe headache, which soon disappeared, followed its use. Analgesia was complete in all cases. In one case he operated for the removal of pus tubes; in a second he removed an enormous fibroid tumor of the uterus; and in a third a large intraligamentous cyst. Some of the patients came off the table in much better condition than if chloroform or ether had been employed.

Dr. E. P. Mallett of New York detailed a case of retroverted adherent uterus in the practice of Dr. Grandin in which an abdominal section was made. At first much difficulty was experienced in finding the subdural space or medullary canal, and the patient complained of intense pain. It was finally found, cerebrospinal fluid escaped, and cocaine was injected, the analgesia being apparently complete in eighteen minutes. So much pain was experienced while the operator was making the incision that it became necessary to administer a few whiffs of chloroform to complete the operation. He also detailed another case in which posterior vaginal section was done for pelvic abscess. In this case the needle was introduced more quickly and with better success; but slight vomiting, as well as other symptoms, occurred. The subsequent course of both cases was uneventful.

Dr. Beverly MacMonagle of San Francisco spoke of two cases which he saw in the practice of Dr. Barbat of San Francisco in which medullary narcosis was used successfully. However, he was told by both patients afterward, and by Dr. Barbat, that they suffered a good deal from vomiting after they had been taken to their rooms, but subsequently recovered without any marked incidents.

Dr. Seneca D. Powell of New York does not

think the time is ripe for this method to be presented to the profession at large. He cited two cases that had occurred in his own practice in which he had used cocaine saying that both patients came very near dying from its effects.

Dr. Rodman, in closing the discussion, said he had used medullary narcosis on a man, forty-five years of age, who had a bursa in the popliteal space, with marked kidney trouble. The result was satisfactory in every respect. The next case was one of advanced kidney trouble in which he did a suprapubic cystotomy. Result, satisfactory. He would use medullary narcosis in those cases in which there are positive contraindications to ether or chloroform. The surgeon should always obtain the consent of the patient before using the method on account of any medico-legal complications that might subsequently arise.

Removal of Pelvic Inflammatory Masses by the Abdomen After Bisection of the Uterus.—A paper on this subject was read by Dr. Howard A. Kelly of Baltimore. Recently the author pointed out the great advantages which accrue from bisection of the myomatous uterus in abdominal enucleation in certain complicated cases. In previous contributions he had described his method of enucleation by a continuous transverse incision from left to right, or from right to left. He now calls attention to the great value of a somewhat similar procedure in certain cases of pelvic inflammatory diseases. The steps of the operation are these: If the uterus is buried out of view, the bladder is first separated from the rectum and the fundus found. Then, if there are any large abscesses, adherent cysts, or hematomata, they are evacuated by aspiration or by puncture. The rest of the abdominal cavity is then well packed off from the pelvis. The right and left cornua uteri are each seized by a pair of stout museau forceps and lifted up; the uterus is now incised in the median line in an anteroposterior direction and, as the uterus is bisected, its cornua are pulled up and drawn apart. With a third pair of forceps the uterus is grasped on one side of its cut surface as far down in the angle as possible, including both anterior and posterior walls. The museau forceps of the same side are then released and used for grasping the corresponding point on the opposite cut surface, after which the remaining museau forceps are removed. In this way two forceps are in constant use at the lowest point. He commonly applies them three or four times in all. As the uterus is pulled up the halves become everted and it is bisected further down into the cervix. If the operator prefers to do a panhysterectomy, the bisection is carried all the way down into the vagina. The uterine canal must be followed in the bisection, if necessary, using a grooved director to keep it in view. The museau forceps are now made to grasp the uterus well down in the cervical portion, if it is to be a supravaginal amputation, and the cervix is bisected on one side. As soon as it is divided and the uterine and vaginal ends begin to pull apart, the under surface of the uterine end is caught with a pair of forceps and pulled up, and the uterine vessels which can now be plainly seen are clamped or tied. As the uterus is pulled still further up, the round ligament is exposed and clamped, then finally a clamp is applied between the cornu of the bisected uterus and the tubo-ovarian mass, and one-half of the uterus is removed. The opposite half of the uterus is also taken away in the same manner. The pelvis now contains nothing but rectum and bladder, with right and left tubo-ovarian masses plastered to the sides of the pelvis and the broad ligaments, affording abundant room for investigation of their attachments, as well as for deliberate and skilful dissection. The wide exposure of the cellular area over the inferior median and anterior surfaces of the masses, offers the best possible avenue for beginning their detachment and enucleation. The operator will sometimes find on completing the bisection of the uterus that he can just as well take out each tube and ovary together with its corresponding half of the uterus, reserving for the still more difficult cases, or for a most difficult side, the separate enucleation of the tube and ovary after removal of the uterus. The operation just described is not recommended to a beginner in surgery. The surgeon who undertakes it must be calm, deliberate, and must bear in mind at each step the anatomical relations of the structures. The author has had abundant opportunity to demonstrate the practical value of this method of treatment in his clinic this year. The advantages of a bisection and enucleation of the uterus as a preliminary to a complete enucleation of tubes and ovaries for pelvic inflammatory and other diseases by the abdominal route were briefly recapitulated as follows: (1) Additional space for handling adherent adnexa, afforded by the removal of the uterus. (2) Great increase in facility for dealing with intestinal complications. (3) Better access by new avenues from below and in front to adherent lateral structures. (4) Elevation of structures to or above pelvic brim, or even out into the abdomen, bringing them within easy reach of manipulation and dissection. (5) Some advantage in approaching both uterine vessels by cutting from cervix out toward the broad ligament as is secured in approaching one of them in the continuous transverse incision. In general the time of the operation is shortened; its steps are conducted with greater precision and surrounding structures are far less liable to be injured. In this way there are fewer troubles and sequelæ, and the mortality is lessened.

Dr. Willis G. Macdonald said his experience in bisection of the uterus had been very largely associated with tumors of the uterus deeply situated in the pelvis, attended with great tension upon both broad ligaments. In dealing with fibroids of the uterus it has been his custom to

follow the method improved by Dr. Kelly, and the only objection to the operation lies in a certain class of cases in which the tumor is deeply situated in the lower segment of the uterus, or extends to one side or the other in the broad ligament, or is associated with microcystic and adherent ovaries, so that, when the operator lifts the tumor out of the abdomen to begin preliminary ligation on one side or the other, he causes considerable tension upon the broad ligament, and when the ligature is placed upon one or the other ovarian artery there is more or less danger of it giving way when the tension is released. He has seen many cases in his own practice and that of other surgeons in which this accident had occurred.

Dr. J. Wesley Bovée of Washington, D. C., said he had occasionally removed the body of the uterus previous to the removal of the appendages in pus cases, also in fibroid tumors of the uterus. In some instances he had followed the method of Kelly. He had recently modified this plan in dealing with pus cases, *i. e.*, he has cut off the tube and ovarian ligaments from the uterus on one side, clamped the round ligament, going down to the cervix, clamping the uterine artery, cutting through the cervix and uterine artery on the other side, going up and removing the appendage on the other side with the uterus.

Dr. W. E. B. Davis of Birmingham, Alabama, expressed the opinion that the method outlined by Kelly would be of great assistance in the severe cases of inflammatory pelvic disease. The removal of the uterus for inflammatory disease had its origin in the difficulties which beset French surgeons in removing the appendages by the vaginal method, so that it became necessary for them to remove the uterus in order to have a route by which they could reach the adnexa. Dr. Kelly, therefore, has accomplished by operating from above what French surgeons had so frequently done through the vagina.

Dr. George J. Engelmann of Boston considers the method a step in advance and said it is really amazing that no one had thought of doing this work by the abdomen before it had been done by the vaginal route.

Vesico-Vaginal Fistula.—Dr. M. C. McGannon of Nashville, Tennessee, read this paper, in which he referred to the work of Sims, Emmet, Mackenrodt, and others, in this field of surgery. He has applied the principle of Mackenrodt in six cases, during the last two years, with primary union and complete closure of the fistula in every case. The technic in each case was the same, and this the author outlined at considerable length.

Osteofibroma of the Uterus.—Dr. George Ben Johnston of Richmond, Virginia, reported this case. The patient, Mrs. S., aged thirty years, is the mother of three children, the youngest being three years old. About two years after the birth of the youngest child she noticed an enlargement of the abdomen, and at times experienced difficulty in voiding her urine. She believed herself pregnant, but on account of the continuance of her menses and increasing difficulty of micturition, she consulted her physician and an examination of the genital organs was made. This examination disclosed a tumor which filled the pelvic cavity, growing from the posterior wall of the uterus and so displacing the uterus forward that it pressed upon the bladder. Six months later she missed her menstrual period, and by this time her size had greatly increased and her ability to void urine normally was almost lost. About the middle of March, 1900, after being all day upon her feet, a severe hemorrhage occurred and the next day she passed a fetus of six or eight weeks' development. Hemorrhage was promptly checked, but her size did not reduce and the pressure symptoms continued. He operated upon her April 10, 1900. Complete hysterectomy was performed. Macroscopic examination showed a tumor about the size of a small orange and of firm consistence. Held between the thumb and fingers, it gave the sensation that is produced by pressing a hard-boiled egg, the shell of which has been broken. Plates, apparently of bone, surrounded the surface, and on opening it a substance resembling medullary tissue was found. This was unfortunately lost, therefore no subsequent histological study of it could be made. Attached to the lower part of the osseous tumor was a small fleshy mass, which contained a body about an inch in length and resembling a heart in shape. On opening the uterus a recent placental site was found near the uterine opening of the right Fallopian tube. Microscopic examination of the tumor verified the diagnosis made macroscopically—osteofibroma. Patient recovered.

Dr. Howard A. Kelly said he would be loath to accept diagnoses that had been made twenty-five years ago in regard to tumors of this kind, when the difference between calcified tumors and teratomata was not clearly understood, and even pathology itself was in a vague condition. In 561 myomectomies he has met with 27 calcified myomata.

Dr. J. Wesley Bovée mentioned three cases that had come under his observation. In one the tumor was removed through the vagina, it being a submucous fibroid. The tumor passed down through the cervix, so that it required only slight slitting of the cervix to remove it. Around the base of it he found considerable bony structure in the body of the uterus near the fundus. Two other interesting cases were detailed.

Appendicitis in the Female.—Dr. F. W. McRae of Atlanta, Georgia, read this paper. At the outset the author referred to an exhaustive article by Edebohls as to the relative frequency of appendicitis in the two sexes; also to the work of Einhorn, who in 18,000 successive autopsies found perforating appendicitis in 55 per cent. of males and 57 per cent. of females. Robinson, in 128 autopsies, found evidences of past perito-

nitis in or about the appendix in 68 per cent. of females and 56 per cent. of males. Clinically, Edebohls finds that 4 per cent. of all women have appendicitis. On the contrary, Deaver believes that 80 per cent. of all cases occur in males. Of 1577 cases of appendicitis collected from the annual reports of the City Hospitals of Berlin, 949 were males and 629 females. In practically all of the cases in females that had come under his observation mistakes in diagnosis had been made either by himself or by the attending physician. Almost all of the attacks had occurred at or about the menstrual term, and most of them had been diagnosticated "inflammation of the tube or ovary." In two cases in his own series the appendix and the right tube and ovary were involved; in two others the appendicular trouble was complicated with diseased kidneys. Two patients suffered with recurrent appendicitis and attacks of renal colic before or after operation for the removal of their appendices. He had records of 49 cases of appendicitis seen within the last sixteen months, 29 of them being males and 20 females. During this period he had operated on 17 males and 14 females. The author then detailed 13 cases which were reported to emphasize the difficulties attending diagnosis. In several of them systematic treatment directed to the genitalia had been carried on without giving any benefit whatever, while the removal of the appendix effected a cure. In others the ovaries and tubes had been removed, and still the symptoms persisted until relieved by appendectomy. The author is convinced that the great disparity in the statistics as to the relative frequency of appendicitis in the male and female is due in a great measure to mistakes in diagnosis. It is much more difficult to make a diagnosis of appendicitis in the female than it is in the male. Sufficient stress has not been laid upon the fact that appendicitis in women usually occurs at or about the menstrual period.

Dr. J. B. S. Holmes of Atlanta detailed three interesting cases of appendicitis in females, which illustrated forcibly the necessity of always examining the appendix when the abdomen of a woman is opened for any cause.

Dr. Hal C. Wyman of Detroit cited a case of extra-uterine pregnancy in which he removed a fetus that had apparently died at the end of the seventh month of pregnancy. The operation was done thirteen months after the appearance of the first symptoms of pregnancy. The appendix was found intimately blended with the fimbria of the right tube. The left tube was also somewhat diseased and he doubted its perviousness. It was not removed because there was no particular indication for its removal. The right Fallopian tube, however, was involved with the appendix by dense inflammatory adhesions, and it occurred to him that in consequence of that blending the impregnated ovum had escaped. With this experience some of the cases of extra-uterine pregnancy might possibly be justly charged to adhesions between the fimbria and the appendix. The appendix was three and a half inches long; it had a number of scars; it was much hardened at its end and at the point where union with the fimbria occurred.

Dr. Howard A. Kelly stated that for four years past he has made it a rule at the Johns Hopkins Hospital to have stated in the history the exact condition of the appendix. During this period he has removed 150 appendices. Of this number 60 were involved in pelvic inflammatory disease. He found the appendix adherent to myomata in 12 and to ovarian tumors in 9. He found carcinoma of the appendix secondary to ovarian carcinoma, without any traceable macroscopic relation in 1 case, and primary carcinoma in 1 case. He found tuberculosis of the appendix secondary to tuberculosis in the tubes and ovaries in 3 cases; in the remainder of the cases calculi, cystic diseases, and uncomplicated appendicitis. If, in opening the abdomen for any pathological condition, the incision is sufficiently large, he would examine the appendix.

Dr. Lewis S. McMurtry mentioned a case in which he had enucleated an ovarian cyst in a woman aged thirty years. She had had a typical acute perforative appendicitis, followed by septic symptoms, which was quite limited in the area of peritoneal involvement. When the abdomen was opened it was found that the appendix, instead of perforating the general peritoneal cavity, pierced the ovarian cyst, in that manner limiting the infection to the ovarian cyst and saving the life of the patient.

Dr. William P. Nicolson of Atlanta called attention to the coincidence of disease of the appendix and uterine adnexa, and cited cases in which symptoms for years had been ascribed to uterine or ovarian trouble, but operation disclosed the fact that the appendix was solely at fault.

Dr. George Ben Johnston expressed the conviction that chronic appendicitis is quite as frequent in the female as in the male. He believes, however, that fewer cases of the fulminating form of the disease are seen in the female than in the male. He has observed numerous cases of chronic appendicitis associated with movable kidney in females, and it is sometimes difficult to determine which is the cause of the distress for which the patient consults a surgeon. The coexistence of the two conditions is so frequent in his practice that oftentimes he keeps patients under observation for days, perhaps weeks, to determine which is the more distressing condition.

Drainage in Abdominal Surgery.—Dr. J. W. Long of Salisbury, North Carolina, said that the chief purposes of this procedure are to drain away existing septic material; to afford an exit for the sepsis; to provoke adhesions and thereby wall off weak spots; to keep the peritoneal cavity free of blood and other fluids; to allow of a more certain knowledge of the conditions present. Gauze drains are sometimes employed as tam-

pons to control hemorrhage. These features of drainage were discussed in the order given. After a historical résumé the author spoke of the objections to drainage. These were as follows: (1) Drainage is deceptive. (2) Cases not drained do better. (3) Drainage is neither scientific nor workmanlike. The last statement was made with an apology and due deference to those distinguished gentlemen who drain most of their cases.

Dr. Manning Simons of Charleston, South Carolina, agreed in the main with the observations of Dr. Long, but said there are some surgeons who would not admit that draining in suppurative cases is an evidence that something has been left which ought to have been removed, or that the surgeon had done something that he ought not to have done. He apprehends that there are many cases in which suppuration is not confined to the tubes, but has diffused itself more or less over the pelvic and abdominal cavities. The surgeon's conscience would scarcely, in such a case, prompt him to close up all avenues for the escape of reaccumulated fluid from the cavity. Drainage is applicable to such cases.

Dr. Howard A. Kelly believes that there is a tendency on the part of the profession to drain entirely too many cases. Of his first one hundred cases, eleven years ago, he drained over 80 per cent. of them. Of his last one hundred cases he drained about 1 or 2 per cent. of them. He would drain cases of localized sepsis in which he could not remove the entire septic area.

Dr. W. E. B. Davis referred to drainage in general septic peritonitis, and said it was impossible to lay down any fixed or definite plan of treatment because results were uniformly fatal. Much good can be accomplished by first using peroxide of hydrogen in the abdomen in this class of cases, and following it with infusion of normal salt solution, injecting, say a quart, under the skin every three hours. This accomplishes even more than multiple drainage in cases of general septic peritonitis.

Dr. Beverly MacMonagle called attention to drainage in connection with surgery of the gall-bladder and gall-ducts. In all cases in which he had operated on the gall-bladder, he had found it was necessary to drain. In so doing it was almost impossible to drain it in such a way that a certain amount of fluid would not escape into the peritoneal cavity, hence the necessity of using a small drain of gauze in the peritoneal cavity itself.

Atresia of the Vagina.—Dr. George H. Noble of Atlanta described a flap operation for the relief of this condition, saying that he had operated successfully in several cases by the plan he had outlined.

Technical Improvements in Surgery of Stomach for Carcinoma.—Dr. Willis G. Macdonald of Albany read this paper. Reference was made to the early history of operations for the relief of this disease. The technic employed by Billroth in his first pylorectomy was the technic of operations done by most surgeons for a number of years, with very slight modifications. This earlier operation presented many technical difficulties in its performance. The matter of the adjustment of the resected stomach and the duodenum at the completion of the operation was frequently defective. Secondary perforation at the line of suture with subsequent peritonitis has been a frequent cause of death associated with this earlier form of operation. Before giving a more accurate description of the preferable forms of surgical intervention in carcinoma of the stomach, the author considered the limitations of early and late exploratory abdominal section in the treatment of this condition. Any one, or a combination of symptoms, is a sufficient indication for operation: (1) A chronic gastritis which is progressive in character under proper dietetic, medicinal and physical treatment. (2) A loss of gastric motility. (3) Progressive diminution of gastric peristalsis. (4) A diminution of free hydrochloric acid, progressive in character. (5) Emaciation of the patient under forced diet. (6) Reduction of the hemoglobin in the blood, progressive to 65 per cent. or under, and a moderate leucocytosis. The widest extirpation is demanded in carcinoma of the stomach. The author called attention to the careful investigations of Cuneo and Most with relation to the distributions of the lymphatics and lymph-nodes as associated with carcinoma of the stomach. All surgery for carcinoma involves the removal of lymph-nodes as far as is compatible with adjacent anatomical structures. In a complete pylorectomy it is desirable to remove the lymphatics along both curvatures of the stomach as well as those lying behind the pylorus. As a rule the duodenum is not extensively involved in pyloric carcinoma, although a few observers have found infiltration of Brunner's glands in the upper portion of the duodenum. There is little justification for the total extirpation of the stomach in the majority of cases, and the probability of cure will not be greater than surgical resection. The old rule of cutting one centimeter beyond all evidences of carcinomatous infiltration is not wide enough. Personally the author feels that the line of excision in the stomach should be at least three centimeters from the border of the last palpable infiltration, and in the duodenum at least two centimeters from the most dependent portion of the growth. The recently-devised clamps of Kocher were presented for inspection, also diagrams showing their mode of application. By the application of these clamps to the stomach and duodenum with a little care all dangers of sepsis from the stomach and duodenum are avoided, and the rapidity with which a pylorus may be resected is greatly increased. Very little time is required to close the ends of the stomach and duodenum with a running catgut suture involving all the coats. This again is invaginated within the stomach and the caliber of the duodenum and the stump bur-

ied by rows of Lembert sutures. The manner of performing the subsequent gastro-enterostomy lies largely with the preferences of the surgeon doing the operation. The speaker's earlier gastro-enterostomies were done by the Wolffler method of attaching the jejunum and the anterior wall of the stomach. It appears to him that the two fatal cases in which he applied that method were due to regurgitation of bile into the stomach and persistent vomiting following operation. Some two years ago he began employing Von Hacker's method of attaching the jejunum to the posterior gastric wall with a reanastomosis between the duodenum and the jejunum. The results of this method of operation have been most satisfactory. During the past year he has employed it eight times with seven recoveries. For the most part, the anastomosis between the jejunum and stomach has been made by the suture method, although a number of surgeons have been quite as successful in the employment of the Murphy button. For the secondary anastomosis the author has uniformly used a Murphy button of moderate size. The anastomosis by this method requires very little time for its performance and can be readily completed in five minutes. When an operation has been carried out by this method to its completion the following advantages were claimed for it: (1) Freedom from contamination of the wound by stomach-contents. (2) Accessibility of the neighboring lymphatic nodes for extirpation. (3) No subsequent danger from suture perforation. (4) Freedom from loss of blood. (5) The great saving of time required for the operation. Lateral anastomosis can be readily accomplished by a variety of methods. The immediate mortality for the operation of pylorectomy is an interesting study. Ewald condemned the operation because of its great mortality, 73 per cent., and until 1888 the mortality was somewhere in the neighborhood of 60 per cent. The mortality of Billroth was 45 per cent., of Mikulicz 30 per cent., of Kronlein 25 per cent., of Maydl 16 per cent., and of Kocher 8.7 per cent. Mayo Robson in a study of 572 cases, collected from various sources, finds an average mortality of 30.4 per cent. Guinard found that in 148 cases of pylorectomy with end-to-end anastomosis, deaths were 56, or 37.8 per cent., and in 64 cases of pylorectomy with subsequent lateral anastomosis, there were 10 deaths, or 15 per cent. This showing has been equally favorable in the experience of others.

Menstrual Condition of the Average Girl in Average Health.—Dr. George J. Engelmann of Boston presented an interesting statistical paper on this subject, the facts presented by him being culled from the records of 4873 cases from high and normal schools, colleges and department stores, girls between fifteen and twenty-six, the majority between eighteen and twenty-two, in rather better than average health, in good health, and in numbers sufficient to admit of positive deductions as to what may be termed normal or average menstruation. In brief, the menstrual period proper is intensified by the increase of all vital energies, followed by a depression which appears with the coming of the flow. Under ideal conditions, and in perfect health, the physiological status is such that this epoch, preceded by a day or two of heightened activity, is marked by a moderate lassitude, mental and physical, the flow persisting for from four to five days, and recurring at regular intervals of about twenty-eight days. It is a period of heightened susceptibility that quickly records any variation from the normal; excitement or exertion, or fatigue, mental or physical, are promptly reflected by variation in the function, and in our every-day life such disturbing elements constantly occur, so that conditions actually existing vary greatly from this ideal. The average period of the average girl in average health presents very different features: Regularity in 50 per cent. of the cases only; recurrence every twenty-eight days in 30 per cent., varying most frequently from twenty-six to forty-two days, 45 per cent. being over twenty-eight. The duration varies from two to seven days, average 4.6; from 66 to 70 per cent. suffer more or less, the number of sufferers varying according to age and nature of occupation, between 30 and 90 per cent. Lessened ability for exertion, mental or physical, is admitted by 60 per cent. Some few are habitually incapacitated from work and 30 per cent. occasionally. The function of the condition of the girl in good health, under modern conditions of life, is by no means an ideal one, and in fact the functional health of the American girl, the coming mother of American men, is far from what it should be by right of inheritance and surroundings. This fact physicians must recognize, and upon them and educators devolve the duty of study and correction of the evil.

Operation for Marked Prolapse of the Rectum in Women.—Dr. J. Wesley Bovée of Washington, D. C., described an operation for the relief of this condition. In his case marked prolapse of the uterus was associated with hemorrhoids and great procidentia of the rectum in a woman to whom the uterine appendages were of little value. No simple operation would have relieved the rectal condition while the uterus was in such a state of prolapse, and *vice versa*. These conditions caused him to resort to the unique radical procedure which can be best described by narrating the following case: Sister V., thirty-five years of age, had been treated unsuccessfully a number of years for prolapse of the rectum, uterus, and hemorrhoids. When she came under the speaker's care she was suffering from large internal and external hemorrhoids, and a protruding roll of fully three inches of the rectum that was thickened and much discolored. The uterus was of normal size, with its cervix just behind the pubes, and the fundus very low posteriorily. A few days later, March 6, 1900, operation was done. The hemorrhoids were first removed, then the ab-

domen was opened by the usual subumbilical median line incision. The left ovary was about three times its natural size, and largely consisted of numerous cysts. The appendages were removed and the uterus firmly fixed to the abdominal wall by four interrupted, strong catgut sutures, which passed through a considerable portion of the uterine fundus at the top, and the principal fascia of the abdominal wall on either side of the incision. The rectum was drawn upward until it was fairly tense, and so held by an assistant until it was sutured to the cul-de-sac and posterior wall of the uterus up to the abdominal wall. This was done by a running catgut suture. It completely divided the retrouterine pelvic cavity into two equilateral ones.

Carbolic Acid in Surgery.—Dr. Seneca D. Powell of New York read this paper. In 1894 he first became convinced that he could control the action of carbolic acid by means of alcohol under all circumstances. At that time he used it in its full strength of 95 per cent. in an abscess cavity upon a patient suffering from suppurative appendicitis. Since then he has extended its use to all cases in which he has had to fight disease due to microbic infection, and he is now prepared to assert its safety and reliability, when properly brought in contact with an infected surface. He bases his statements on the results of treatment of hundreds of cases which have come to his clinic at the Post-Graduate Hospital. The speaker has used carbolic acid for years in the treatment of infections and bone diseases in various parts of the body. He recommends its use likewise for erysipelas and abscesses. During the past six years he has treated every phase of microbic disease with this agent, and as early as 1894 hip-joint cases were treated by him with pure carbolic acid and with a large glass drainage-tube. Abscesses, wherever located, can be speedily treated by the injection of, or swabbing with, pure carbolic acid. The size of the abscess, or the amount of surface covered, is not a factor. Only thorough drainage and complete removal of the pyogenic membrane need be considered.

Excision and Irreducible Dislocations.—This subject was discussed by Dr. Willis F. Westmoreland of Atlanta who reported two cases. The first one was an arthrotomy, with excision of the head of the humerus for old dislocation of the shoulder-joint. Miss A. W., white, aged twenty-four years, was thrown from a buggy, right shoulder and elbow-joint being injured. A physician saw the patient, but made no diagnosis. On account of continued pain and lack of motion she consulted a second physician, who recognized dislocation of the shoulder. An effort was made to reduce it, but failed. Upon examination, the author found a subcoracoid dislocation of shoulder-joint, and a badly treated fracture of the external condyle of the humerus. The patient was anesthetized, and an unsuccessful attempt to reduce by Kocher's method was made. Any legitimate force completely failed to even move the head of the humerus. Patient held for operation. A vertical incision, begun just below the acromion process and carried along the inner aspect of the deltoid for about five inches, was made. When the capsule was reached it was split transversely; the head of the humerus was released from its attachments by dry dissection. The head of the bone was then turned out and excised close to the attachment of the capsule. The upper portion of the humerus was pushed up against the glenoid fossa, and the capsule shortened sufficiently to hold it there. In shortening the capsule all excess is inverted and helps to fill the cavity, leaving a very much smaller space to be filled in by adventitious tissue. In this case the slack of the long tendon of the biceps was excised, and the tendon united by mattress and coaptation sutures. The incision was closed, except a small central opening for drainage. There was primary union; and the patient made an uneventful recovery and was discharged with full movements. The second case was as follows: E. D., male, white, aged twenty years. Shoulder dislocated two months ago while boxing. Immediately after the injury a local physician attempted reduction, but failed. Four days later the patient was anesthetized and Dr. Westmoreland made an unsuccessful attempt to reduce by Kocher's method. On the same day an operation similar to the one in the case was performed and patient made an uneventful recovery.

A Plea for the Better Appreciation of the Limitations of Operative Work.—This was the title of the President's Address, delivered by Dr. A. M. Cartledge of Louisville. Every surgeon must be his own arbiter in deciding questions, and the judgment he displays will depend upon his professional learning and wisdom. Methods of surgical diagnosis have undergone striking modifications within the past decade and have influenced operative work. The older surgeon made his diagnosis of abdominal and pelvic lesions slowly; his skill at that time consisting largely of a delicate sense of touch, trained eye to detect asymmetry, keen ears to differentiate sounds elicited by percussion, and methodical investigation of all symptoms, both subjective and objective. The result was, his diagnosis having been made, he next carefully and with abundant time before him considered the advisability of operative intervention. It is as much a part of the knowledge of surgery to know its limitations, or what it cannot do, as to be justly proud and ready to perform that which it has very good reasons to believe will be productive of relief, and cure to the thousands of unfortunates who seek its aid. From every standpoint there is much to be gained by a better appreciation of operative limitations. A plea was entered for more careful diagnoses with an especial view to the detection of attending visceral disease, in short, to try and become more expert prognosticians. There

are two phases of surgical practice alone, the careful observance of which would reduce the mortality of surgical operations so low as to cause us to believe that exactness had almost been reached. He referred to greater care in the detection of kidney lesions and instituting measures to correct this frequent cause of unfortunate operative terminations, and the still prevalent practice of operating upon hopeless cases of cancer. In reviewing the field of abdominal and pelvic surgery it would seem that surgical limitation is most often exceeded and mortality unnecessarily increased in operations for the following diseases: General septic peritonitis, extensive carcinoma of the ovaries, uterus and intestine, and operations upon the gall-passages in long-continued and profound cholemic patients without adequate preparation. He protested against the too frequent practice of operating in these affections. As to laparotomy in cases of general diffuse septic peritonitis, with irrigation and drainage, reports of such cases have appeared in literature from time to time, but the mortality up to the present time of such operations in exaggerated types of the disease is so great as to make it, in his opinion, an unwarranted procedure. He is strongly impressed with the belief that the successful cases reported have been cases of beginning general peritonitis, or of widely-extending, yet circumscribed peritonitis. In closing, the author impressed the importance of carefully preparing cholemic patients before subjecting them to operation with a view of lessening mortality. Another class of cases amenable to the same course of preliminary treatment are those of inefficient renal action.

Excision of External Carotid in Malignant Diseases of Face.—Dr. William P. Nicolson of Atlanta, Georgia, reported two cases. The first patient had a sarcoma of the nose which began apparently as a polypus about eight months before. This was removed several times, but recurred promptly after each removal. When seen a few weeks before the operation this had extended sufficiently to completely obstruct the nose and cause great pain. At the time of operation this had progressed in a few weeks only to such an extent that the growth pressing under the orbit had forced the right eye out of position, and there had been also an extension upon the forehead on the left side. The constant use of morphine was necessary. The right common carotid was excised on October 3d, and the wound healed promptly. The enlargement upon the left side of the forehead broke down, and the large abscess was opened a few days after the operation. The pus from this, or the discharge from the nose, set up a violent ophthalmia, from which the patient suffered for a week or ten days. Two weeks from the day of the first operation the carotid upon the left side was removed, and very soon the symptoms improved in every respect, the patient was relieved of suffering, and the growth not only checked, but it apparently began to recede with the prospects of a material improvement. The second case was one of inoperable sarcoma of the upper jaw of three months' duration and of very rapid growth. In this case the interval between the operations was longer than in the first on account of the occurrence of a severe secondary hemorrhage on the seventh day, which was due to tying the vessel too close to the bifurcation. The first operation in this case relieved the patient of all symptoms caused by the rapidly-increasing pressure, and the growth apparently subsided materially. Sufficient time has not elapsed since the second operation to give much idea as to how much permanent decrease there would be in the tumor. It was claimed that in these cases the patient was doomed if nothing could be done, and this appeared to be the only recourse that offered any hope. He had performed various operations upon the external carotid artery in cases of malignant diseases, having tied the vessel twenty-six times, four of these being cases of double ligation. The operation had not been accompanied by any mortality. Little could be accomplished by simply ligating even both carotids, because the circulation was reestablished so rapidly that the nutrition could not be cut off with any degree of permanence. The operation of excision, as recommended by Dawbarn, seemed to be the only procedure that offered any hope, and while this would not perhaps produce much permanent effect, it seemed undoubtedly true that the lives of patients could be much prolonged and their sufferings greatly lessened.

Autointoxication from Renal Insufficiency With or Without Disease of the Kidneys.—Dr. James T. Jelks of Hot Springs, Arkansas, read this paper. For years he had examined the urinary output for twenty-four hours of every patient who consulted him. This has been a revelation to him and therapeutics based thereon have enabled him to accomplish what he described as marvelous results. Abundant evidence was adduced to show that as the result of faulty elimination by the kidneys, without the presence of disease in these organs, patients may have vertigo, contracted capillaries, cold skin, especially of the extremities, so-called "sick headache," melancholia, palpitation of the heart, interrupted heart beat, various forms of skin diseases, rheumatism, gout, hysteria, epilepsy, and even genuine insanity. Among the remedies used to correct this faulty elimination are squills, milk, rectal, or hypodermic injections of normal saline solution, digitalis or its derivatives, sodium phosphates, sodium salicylate, Vichy water, etc. All of these were used in connection with baths, when it was possible to give them, and the patients were ordered to drink from one-half to one gallon of hot water daily. Twenty-five cases were detailed as having been treated along the lines mentioned, with the most gratifying results.

Dr. George S. Brown, of Birmingham, made (*a*) a supplementary report regarding a case of

biholopaxy previously presented to the Association, and (*b*) a supplementary report with reference to a case of vesicorectal fistula.

Dr. James A. Goggans of Alexander City, Alabama, reported one case of strangulated femoral hernia in a woman, forty years of age; three cases of extra-uterine pregnancy; one case of thoracotomy for empyema, and one case of ovarian cyst.

Life-Saving Measures in Obstetric Work.—R. R. Kime of Atlanta said that leaving out of discussion instrumental deliveries, Cesarean section, symphysiotomy, etc., the most important life-saving measures were saline infusions, medicinal remedies, serotherapy, hydrotherapy, and drainage. In cases of placenta prævia and postpartum hemorrhage saline infusions or intravenous injections are of prime importance, not only to save life, but to lessen susceptibility of infection and hasten recovery.

Pseudomembranous Enteritis and Abdominal Surgery.—Dr. Frank A. Glasgow of St. Louis called attention to this very common disease and urged physicians to study its relations to appendicitis.

Solid Ovarian Tumor.—Dr. John G. Earnest of Atlanta reported a case of solid tumor of the ovary. The patient, Miss M., aged thirty-two years, was seen June 24, 1900. She was a very small woman with a narrow pelvis, had been gradually losing flesh for several months. For months patient had fever every day. There was constant pain in the pelvis; was very despondent, worn out and exhausted. She had a constant watery diarrhea, occasionally interrupted by a few days' constipation, and accompanied by great abdominal distention. This condition, when occurring, was relieved with difficulty, requiring active purgatives and free use of enemas. Nausea was distressing. When the abdomen was opened a mass reaching above the umbilicus was observed. It stood out prominently in the median line, was symmetrical, smooth and hard. It was so firmly fixed that it could not be moved. The dark line down the center of the abdomen was unusually pronounced. Examination by the vagina was somewhat hampered by an unruptured hymen, and tenderness due to the local peritonitis, but he found the cervix pointing forward, low down, and twice its normal size; the uterus retroverted, firmly fixed, and apparently continuous with the superimposed tumor. Rectal examination disclosed that the uterus and tumor were parts of the same body. The fundus uteri could not be reached through the rectum. He believed it to be a uterine fibroid. Patient declined operation until she could go to her home and build up under the care of her family physician. This she did, returning August 1st. On August 3d he opened the abdomen, evacuated a small amount of light-yellow ascitic fluid. The abdominal peritoneum was mottled with dirty brown. The tumor showed the pearly luster of an ovarian tumor. It had so grown that it seemed to be caught under the promontory of the sacrum and was adherent to the pelvic wall. It was enucleated with some difficulty. The pedicle was from the right side and comparatively small. The tumor, when removed, was found to be ovoid in its general outline, with an indenture corresponding to the promontory of the sacrum. It measured twenty centimeters in length, and about fourteen in breadth at the widest point. When cut open its appearance was very much that of an ordinary uterine fibroid, the tissue being quite dense. The cortex was united to the tumor by a thin layer of cellular tissue infiltrated with serum. No microscopic examination was made. At first it was supposed to be a sarcoma, but careful examination showed the fibers to be distinct and arranged in irregular whirls, as in uterine fibroids, and the tissues quite as hard as any fibroid and absolutely solid without a break. The recovery was uninterrupted.

Histogenesis of Ovarian Dermoids.—Dr. W. D. Haggard, Jr., of Nashville gave a verbal abstract of a paper on this subject. He stated that dermoid cystomata of the ovary differ essentially from dermoids in the orbit, pharynx, mediastinum, scrotum, coccyx and elsewhere. The last are unquestionably from inclusions or nipping off of the ectoderm in the development of the embryo, which is similar to the "healing in" of skin in wounds and the subsequent development of a dermoid growth. These structures all contain sebaceous material, hair, plates of bone, teeth, etc., and purely dermal derivatives. Ovarian dermoids contain derivatives of all the mesoderm and enteroderm as well, and hence some adequate explanation other than the inclusion of the skin-forming layer must be forthcoming. All sorts of curious theories have been successively advanced. The virginal pregnancy idea was succeeded by one which ascribed the origin of these growths to prolonged ungratified sexual desire on the part of the woman. A man who jested at his wife during travail was afflicted with a pregnancy (dermoid) of the thigh. Dermoids of the ovary, however, are akin to the teratomata, and it is to the ovum itself that we must look for a solution of the vexed problem of their etiolgy. Wilms was the first to claim the ovulogenous origin of these growths. Some pathological activity on the part of the ovum in the Graafian follicle is responsible. Bland Sutton found a dermoid of the ovary in a horse when the growth was undoubtedly in the ovum suspended in a large cystic Graafian follicle. Similar cases have been reported in women. Kraemer has recently gone over the entire field and amassed an amazing amount of material that goes far to settle the question, and prove that ovarian dermoids contain products of all the blastodermic tissues, that they cannot spring from an evolutional inclusion simply as dermoids elsewhere undoubtedly do, that they are of ovulogenus origin, a sort of parthenogenesis. In evidence an attempt at formation of nearly all

the organs of the body has been found in the lawless development of these benign growths. Retinal pigment, more or less complete, optical vesicles, a rudimentary pharynx, with an attempt at the formation of an esophageal tube; the sympathetic nerves in the alimentary canal, and, curiously enough, a rudimentary uterus, with branching cells of the cervix and the glands of the fundus; mammæ (one case of which underwent carcinomatous development). An easily-recognized heart provided with valves was found by Johnston; and many other more or less perfectly formed organs and tissues other than dermal have been reported by investigators too numerous to individualize. These data have, as remarked by Clark, dealt a telling, if not fatal, blow to the inclusion theory of ovarian dermoid evolution. The researches of Kraemer and others seem to establish convincingly the ovulogenous theory of their development.

The following papers were likewise read and discussed: "Removal of Cystic Gall-Stones," by Dr. Howard A. Kelly of Baltimore; "Osteo-Arthritis of the Spine," by Dr. Michael Hoke of Atlanta; "Epi- and Hypospadias, with Special Reference to the Operative Treatment," by Dr. W. F. Parham of New Orleans; "Retroflex Incarcerated Gravid Uterus," by Dr. W. A. Quinn of Henderson, Ky.

Much to the regret of the members, Dr. W. E. B. Davis resigned the secretaryship, owing to the pressure of other duties, after having served the Association ably and efficiently from its organization to the present time. A resolution was offered and unanimously adopted thanking Dr. Davis for his efficient services, tireless efforts, and faithful devotion to the interests of the Association during a period of thirteen consecutive years.

Officers Elected for 1901.—President, Dr. Manning Simons of Charleston, S. C.; Vice-Presidents, Drs. George H. Noble of Atlanta, Georgia, and L. C. Bosher of Richmond, Va.; Secretary, Dr. W. D. Haggard, Jr., of Nashville, Tenn.; Treasurer, Dr. F. W. McRae of Atlanta, Georgia.

Richmond, Virginia, was selected as the place for holding the next annual meeting; time, third Tuesday in November, 1901.

Twenty-nine new members were elected at this meeting. After the installation of officers, and the adoption of resolutions of thanks, the Association adjourned.

BOOK REVIEWS.

Contributions from the William Pepper Laboratory of Clinical Medicine. University of Pennsylvania, Philadelphia.

This is a quarto volume of 500 pages made up of 14 contributions from the Pepper Laboratory, all of exceptionally high scientific character. It is a contribution appropriate to the founder.

While most of the papers are technical in character, some stand out as of greater interest from their relation to clinical medicine. Thus, the studies on Leukemia and the Pathology of the Erythrocyte, by Drs. Taylor and Stengel, are practical and timely in view of the rapid strides made in hematology. The Restitution of the Blood Plasma following Intravenous Saline Injections after Hemorrhage, by Drs. A. E. Taylor and C. H. Frazier, offers a practical demonstration of the benefits of this therapeutic procedure. The Influence of Immoderate Water-drinking upon Metabolism and Nutrition, by Dr. D. L. Edsall, is a capital study of this frequent procedure and strikingly demonstrates the evils of the habit. We would like to see similar products from our large university laboratories.

International Clinics. A Quarterly of Clinical Lectures and Especially Prepared Articles on Medicine, Surgery, etc., by Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A.M., M.D. Volume II., Tenth Series, 1900. Philadelphia: J. B. Lippincott Company.

The present volume of "International Clinics" contains a good representative series of lectures on practical subjects. The editor himself, in the initial article, describes the kromskopic method of reproducing pictures of pathological specimens in their original colors. Every teacher realizes how important a matter for educational purposes such an advance in our present method of illustrating pathology would prove. The kromskop, as invented by Mr. Frederick Ives, is probably the most successful means of photographing in colors yet presented to the public. The results obtained by his method as illustrated in the frontispiece of the book, the kromogram of an ovarian cyst, are certainly very satisfactory.

New York teachers of medicine are well represented in the present volume of the clinics. We note among the contributors the names of Dr. Andrew H. Smith, Dr. Alexander J. C. Skene, Dr. J. Riddle Goffe, Dr. William H. Katzenbach, Dr. Robert T. Morris, and Dr. Charles Warrenne Allen.

Dr. J. W. Ballantyne, of Edinburgh, contributes an important article on the therapeutics of the unborn infant, and Dr. J. C. Wilson, of Philadelphia, a clinic on atypical enteric fever of peculiar interest at the present time when practitioners in many parts of the country are being confronted with unusual forms of typhoid fever. Dr. Andrew H. Smith opportunely discusses the inadequacy of the physical signs as indicating the gravity of pneumonia, and Dr. Charles J. Aldrich, of Cleveland, contributes a very practical clinic on compressed air illness, or caisson disease, with which he has had considerable experience during the construction of the new water tunnel beneath the bed of Lake Erie.

As a whole the present volume of "International Clinics" is an excellent mirror of hospital practice in various parts of the medical world

and its perusal should form some compensation to the busy country practitioner for the opportunities he might have if situated in a medical center.

Operative and Practical Surgery. For the Use of Students and Practitioners. By Thomas Carwardine, M.S. (Lond.), F.R.C.S., Assistant Surgeon, Bristol Royal Infirmary. 8vo., 661 pages. Illustrated. Bristol: John Wright & Co.

"I have thought that I may for once leave the science of surgery alone—it is, indeed, well able to take care of itself—and, instead of the science, I shall speak of the art." In this quotation of J. Greig Smith's is embodied the true point of view in and scope of Mr. Carwardine's text-book of surgery. Beginning with a section on general considerations, the author therefrom directly passes to a discussion on bandaging, dislocations, and splints and fractures. This portion is an admirable statement of the practical points connected with the subject. Section III. is a lucid summary of the art of bone, joint, nerve and tendon surgery. Ligation of the principal arteries with special reference to anatomical details is also treated of in the same section. Following this come the discussions of regional surgery in its varied aspects. Finally, the book terminates with a very full index which will be particularly valuable in looking up special points. The arrangement is otherwise so excellent that little difficulty ought to be experienced in finding the main points relating to any given subject.

In looking over the book one readily sees that in the matter of technical steps of various operations the author has kept pace with the movement of the time. In the matter of aseptic technic, however, the author evidently relies too much on antiseptics and not sufficiently on heat as a factor in sterilization. Outside of this one point the book will be found an excellent guide to the art of operative and practical surgery.

Clinical Lectures on the Urine and Urinary Diagnosis. A Clinical Guide for the Use Practitioners and Students of Medicine Surgery. By J. Bergen Ogden, M.D., Instructor in Chemistry, Harvard University Medical School, etc. W. B. Saunders & Company, Philadelphia.

Conceived in a thoroughly modern spirit the present volume on the examination of the urine is one of the best that has been presented to the student and practitioner of medicine. There remains little else for the reviewer to say as the subject of urinary analysis is one so thoroughly exploited by numerous publications. The text is clear and well written, the illustrations numerous and, for the most part, well executed, many of them in color. We regret to see, however, so many of the crude, old, time-worn illustrations. The modern methods of chemic spelling are not followed, but this perhaps is an advantage rather than a blemish. The work is thoroughly "up to date" and can be heartily recommended.

The Care of the Child in Health. By Nathan Oppenheim, A.B., M.D., Attending Physician to the Children's Department of Mt. Sinai Hospital. Three hundred and eight pages. New York and London: Macmillan & Co., 1900.

Dr. Oppenheim's work on the "Medical Diseases of Childhood" was written for his fellow practitioners. This book is written for his patients, or rather, to be put into the hands of mothers, and to be boiled down for nursery-maids. It is a good, sensible book, in the form of a series of little essays, beginning with the child before he is conceived, and laying down the law very gracefully, but firmly, to the young women who are to become the mothers of the race. The same young women are advised during their pregnancy what to eat, to wear, to do, and to think in order to bear strong, healthy children. Then, presupposing a more or less prevailing ignorance on the subject, the young mother is carefully instructed how to feed and clothe and bathe her child, how to teach him habits of health, and to develop his body to its fullest capacity. It is a good book, and can be safely recommended to physicians to recommend in turn to the up-bringers of children. It is perhaps a trifle too general, and will serve as a book for mothers to lend to their less enlightened friends, rather than a book that is used for steady reference. It contains only what every mother ought to know by education and experience; but as many of them lack that, it will doubtless fill a need.

Laboratory Directions for Beginners in Bacteriology. An Introduction to Practical Bacteriology for Students and Practitioners of Comparative and of Human Medicine. By Veranus A. Moore, B.S., M.D., Professor of Comparative Pathology and Bacteriology, New York State Veterinary College, and of Bacteriology, Cornell University Medical College, Ithaca, N. Y. Second Edition, Enlarged and Revised; 143 pages. Boston: Ginn & Co., 1900.

The author begins with general directions as to stocking a laboratory, cleaning glassware, and preparing culture media and the staining solutions. Then follow directions for the making of tube, plate, and Esmarch roll cultures, the making and staining of cover-glass preparations, and the methods of examining these. The properties of bacteria, such as gas-production, motility, and spore-formation are considered, and the more common pathogenic organisms are studied individually. Chapters are devoted to the Widal serum test, isolation and identification of bacteria, studies in disinfectants, milk, water, and animal inoculation for diagnosis. The author has condensed a large amount of practical bacteriology in the form of exercises into a convenient and compact work. It is a very simple guide however.

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ORIGINAL ARTICLES.

WHEN SHALL WE OPERATE IN APPENDICITIS.[1]

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IN the present state of medical opinion it is absolutely impossible to lay down any rule on this question which will be, or perhaps ought to be, followed by the profession. Such a rule is not yet and probably never will be formulated. Yet it is a matter for congratulation that we are able to see a little light in the chaos of opinion and find that after all we are not so far apart as some would have us believe. It has occurred to me sometimes that some of us are not absolutely sincere in our statements of our position. Some say "operate" in every case without any qualifications, and I am sure they do not do it. Others are opposed to all operations, and so express themselves, and yet I know there are cases where even they will consent to, or urge, an operation, and among those who fancy that they have a definite rule by which they decide to operate or not to operate, it is not so much the rule as it is an indefinable impression gained from experience which oftentimes settles the question as to when they shall operate.

It is possible to divide the cases of appendicitis into a group of classes each of which, perhaps, deserves a separate consideration. (1) Cases recognized as appendicitis at their inception, of moderate severity of symptoms. (2) Cases recognized as appendicitis at their inception and characterized by great intensity of symptoms. (3) Cases not recognized as appendicitis until several days have elapsed, symptoms then becoming pronounced. (4) Cases recognized as appendicitis in which the surgeon is not called until the symptoms have begun to abate as indicated by diminution of pain, temperature and pulse-rate. (5) Cases in which delay has resulted in general peritonitis or septicemia. This classification, although essentially arbitrary, seems to me to be a fairly practical one, at least it is one that shapes itself in my mind as I examine a case of appendicitis, and, since I realize that each operator has his own peculiar views regarding the question of operation, I shall not attempt in any way to make their views harmonize or to present them for consideration, but rather add my own views, so far as it is possible for me to formulate them, to what has already been written.

1. Cases recognized as appendicitis at their inception and of moderate severity of symptoms. These cases are most elusive and deceptive. It must be clearly recognized from the start that, however mild may be the onset, there can be no possible way of telling when the case may become alarming and no physician or surgeon can tell more than one totally out of the realms of medicine when an appendix may rupture. A few days or a few hours may be sufficient to determine gangrene of the appendix.

I believe it is in this class more than any other that the physician and surgeon differ. Realizing fully the responsibility attached to an opinion in these cases I believe that if the conditions for operation, that is, the surroundings, assistants and operator, are favorable, immediate operation will result in the greatest number of cures. Personally, I cannot recall a case in a series, now becoming somewhat extensive, when under such circumstances I have lost a patient. On the other hand, I am sure, from the examination of the appendices removed, that while some of them would undoubtedly have gone on to recovery, perhaps never to recur again, some of them were already at the point of gangrene, or of rupture, or were filled with concretions or pus which foretold a severe or fatal attack if left alone.

There is one consideration which has contributed not a little to the desire on the part of the attending physician to delay the operation, and that is the belief that if the patient recovers it is much better to operate between attacks. It is to be regretted that this belief should have received the wide credence which it has, for it certainly has been a stumbling-block of no small magnitude. I believe that any case of appendicitis can be operated on at the beginning of an attack quite as successfully, indeed, often more successfully than between attacks, and, if it resolves itself into a question of operating at the beginning of an attack or between attacks, then the former should be chosen. Why? (1) Because no one can positively say whether the patient will live through the present attack. (2) Because each succeeding attack when completed leaves the appendix by reason of adhesions, lymph deposits, and increased abnormal relations, in a more unfavorable condition for operation.

I feel very strongly that this fact cannot be too much emphasized and the sooner the glamor of operating between attacks and its fancied ease are removed the greater will be the safety of the patient. Suppose that in a case under this group the consent of the patient or the attending phy-

[1] Read before the Cuyahoga County Medical Society, October, 1900.

sician cannot be obtained for an operation, is there any way in which we can follow the case and give a reasonable estimate as to its progress? In many cases, yes. In some cases, no. Some will change so rapidly for the worse that the patient will be beyond the reach of surgical or medical aid in a few hours. In the less acute and more favorable cases, however, we can follow the progress in most instances very accurately and intelligently by means of the white blood-count. An increasing leucocytosis in appendicitis is, I believe, sufficient evidence of increased inflammation and probably pus formation, to justify the urging of an operation, while a stationary white blood-count will almost certainly indicate the subsidence of the inflammation and a favorable outcome may be almost safely predicted. To variations of temperature I attach but little importance, but an increasing pulse-rate is a matter of serious moment and deserves careful consideration, for it is probably the early indicator of septic intoxication or possibly of septic infection.

2. Cases characterized by great urgency and intensity of symptoms. In these cases I believe great pain to be the most characteristic and important symptom and I have no hesitation in saying that they should be operated upon at the earliest possible moment; fortunately for the patient his acute suffering usually persuades him not to delay in acquiescing to an operation. It is folly to wait under any pretext in these cases. It goes without saying, of course, that some might get well of themselves, but the very intensity of the symptoms leads us to fear rapid progress and perforation may take place too early for Nature in her conservative efforts to wall off the diseased appendage and permit general peritoneal infection.

3. Cases not recognized as appendicitis until several days have elapsed, symptoms then becoming pronounced. Even in these cases it seems to me that operation is indicated, although it may not be so urgently demanded. The time which has already elapsed will probably have been sufficient to wall off the appendix and prevent the spread of infection, and when strenuous objection is urged by the patient or the attending physician it may be considered reasonably safe to wait long enough to determine by means of the white blood-count whether the inflammation is progressing or diminishing. If the former, operate; if the latter, delay is under such circumstances permissible.

4. Cases recognized as appendicitis but which the surgeon does not see until the symptoms have begun to abate as indicated by diminution of pain, temperature and pulse-rate. This class of cases is not infrequent, and I recall at least five such in the past year in which I have advised against immediate operation and recovery followed in each. Why not urge operation in all these attacks? Why wait and operate between attacks? (1) Because the advantages of an immediate operation, absence of adhesions, etc., are lost. (2) Because the patient's general condition is lowered and a few weeks of convalescence and recuperation will put him in a better condition to withstand the slight shock of operation.

Would I operate in all these cases that had been allowed to reach the stage known as between attacks? No. What then governs my position? As near as I can formulate it, it is this: If the preceding attacks have been severe ones, I urge it. If the patient expects to travel or go away to school, or otherwise put himself in a position where immediate aid under favorable surroundings might not be secured, I urge it. If the patient is not sufficiently intelligent to appreciate the importance of the condition and feels that because he has gone through one attack he will safely go through another, I urge it; but if the patient is intelligent, if his circumstances are such that he can obtain medical aid at any moment and if he will agree that at the first onset of the disease he will submit to an operation, then I do not insist upon an operation between attacks. Why? (1) Because he may never have another. (2) Because the next attack is readily recognized and the diagnosis made very early. (3) Because an immediate operation is in my opinion practically as safe and as easy as one between attacks.

5. Cases in which delay has resulted in general peritonitis or septicemia. What must the surgeon say in answer to an appeal that he operate in these cases; an operation of last resort, "the only chance for the patient." Well, if he were to answer according to his wishes, according to the best interests of his reputation and his disinclination to shoulder a responsibility that belongs elsewhere, I believe he would resolutely say "no." I must confess I have been greatly tempted to take the position advocated by one of America's greatest surgeons at the recent meeting of the American Medical Association and say in these cases, so unfavorable in their outcome, so sure to die, that operation is hopeless, for the operation gets the credit of killing the patient and undeserved discredit is insensibly cast upon a conservative operation, for unfortunately, even yet to the average person out of the medical profession, appendicitis, grave or mild, is still appendicitis, and the last thing done is the cause of death.

A MEDICAL VIEW OF THE TREATMENT OF THE CECUM AND APPENDIX.

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While this paper deals particularly with therapeutics, some consideration of pathology, etiology, prognosis and diagnosis is necessary as a basis. Without quoting in detail any of the various surgical classifications of appendicitis, prompt and radical operation should be urged in all instances in which sepsis is the essential con-

dition or the essential danger. These include perforative appendicitis, gangrene, circumscribed abscess (the old perityphlitis or, more critically, paratyphlitis) and also strictured, distorted and adherent appendices and those that are the seat of such bacterial infiltration and ulceration that spontaneous cure cannot be expected. On the other hand, mild cases of catarrhal appendicitis, without peritonitis or more than superficial ulceration, in short, cases in which the appendix is involved simply as a part of the cecum, are amenable to medical treatment. According to the judgment of most conservative physicians, it is scarcely justifiable to perform the radical operation of amputating the appendix as a means of prophylaxis, unless there is reasonable probability of a recurrent inflammation, while removal of any organ is not treatment.

Except that the anatomical relations of the appendix render any septic condition of paramount danger, a close analogy may be drawn between it and the tonsil. Both are vestigial organs, rich in lymphoid tissue and, as a consequence, points of lessened resistance and particularly prone to interstitial inflammation ending in suppuration. In determining whether to use destructive or conservative measures in dealing with the inflamed tonsil, we consider not only the inflammatory reaction, but whether the tonsil is primarily the seat of inflammation or whether it simply participates in a general pharyngitis. Likewise, it is important to determine whether the appendix itself is at fault or whether this part of the cecum shares in a more general inflammation of the head of the colon. I shall not delay to show that typhlitis is a real disease. Its existence is demonstrated both clinically and by necropsies and the burden of proof rests with those who, in the reaction from the earlier error of ignoring the appendix, have implicitly claimed that the cecum was a part of the alimentary canal exempt from inflammation.

The bacteriologic study of numerous cases of appendicitis, as well as of diarrhea, dysentery (non-amebic), colitis, even of cholecystitis, has shown that the bacillus coli communis is the germ chiefly concerned, although it is normally a comparatively innocuous inhabitant of the bowel—not, however, a necessary parasite.

Taking cold is a time-honored factor in all inflammations and we must admit that, especially in the form of going for hours with the feet cold and damp, it may be a contributing factor in producing a typhlitis. Traumatisms are infrequent causes. The repeated, slight traumatisms of muscular action have been overrated. A recent article, with sublime ignorance of anatomy, has even attempted to incriminate the sartorius and to establish a greater liability to inflammation of the appendix among tailors and others who sit cross-legged. The iliopsoas, in hill-climbing, bicycle-riding, etc., undoubtedly causes some indirect friction against the appendix and probably aids in the production of inflammation when other causes are present. Edebohls has emphasized the connection between movable right kidney and appendicitis. In about five hundred persons examined for movable kidney, I have found only one case of this association. In about ten per cent. of the cases examined, at least one kidney was found movable. This high percentage is due to the fact that about two hundred of the series were parous women who had some uterine displacement. In about forty cases of appendicitis, in which thorough palpation was practised, either before or after the attack, no renal movability was found.

The rather frequent invasion of the cecum and colon in typhoid, the occasional occurrence of a genuine appendicitis in this disease, and the infrequent finding of a tuberculous appendix, indicate a connection with specific bacteria but, as a rule, the prime infectious element is the colon bacillus.

Coarse, indigestible food is not a very direct cause of inflammation of the cecum and appendix, on account of the distance from the mouth and because the normal intestinal mucosa is not particularly susceptible to mechanical insults. The presence of seeds and other foreign bodies in the appendix has been shown to be exceedingly rare, some of the older statistics being misleading, because concrements were mistaken for true foreign bodies. However, there seems to be, especially for children, a combined mechanical and toxic action of peanuts that determines an inflammation at this locality. If, however, a typhlitis is once started, corn, raw starch, and indigestible parts of fruits may continue the irritation of the mucosa and may bring about relapses.

A careful and impartial study of typhlitis and appendicitis will show that, in practically all cases, we may make out one general etiologic factor, *viz.*, some condition of the alimentary canal favoring a virulent development of the colon bacillus. In a small majority of cases, a history of chronic constipation can be elicited and the persons attacked are, in general, either those of sedentary habits or those guilty of serious infringements of dietetic hygiene. Imperfect mastication, eating between meals, the use of excessive quantities of fermentable or putrescible foods, such as sugar and tainted meats, respectively, often the positive account of symptoms of gastro-enteric fermentation, flatulence, etc., are frequently noted in the history. Many restaurants make a practice of buying meat, oysters, fish, etc., that are on the verge of rottenness, and of disguising the flavor by frying or serving with rich and highly-seasoned sauces. Sometimes a special article of food, such as pork, canned lobster, baked beans, cabbage, or the ingestion of a large quantity of alcoholic beverages may be incriminated.

While it is an easy matter to quote prognosis tables from the periodical literature, the different series differ so much in severity, according as they are collected by different observers, that no

accurate comparison can be instituted. However, the following general statements are borne out by all comprehensive reports:

1. Patients operated on at the very beginning of symptoms pointing to the appendix almost all recover. The slight mortality is no greater than would be expected from errors of technic, occasional general weakness, accidents of anesthesia, etc., if the operations were performed as vivisections without local disease.

2. Up to about the third day, unless the cases are fulminating, even severe cases of appendicitis show a low mortality, varying up to about fifteen per cent.

3. After the fourth day the patient has either passed the immediate need of operation or it is too late to operate except with the idea of affording the benefit of a desperate chance. Few surgeons advise amputation of the appendix at this stage, the object being to evacuate pus or to attempt to limit the septic process by suturing, packing, etc. Some surgeons openly advocate the brutal policy of refusing to operate under any circumstances at this time, so as to keep their statistics of results favorable and to teach medical men to refer such cases for early operation.

4. If we include as appendicitis all cases with symptoms calling attention to McBurney's point, that is, all on which extremely radical surgeons would operate, if they had the chance, the results of medical and surgical treatment are about equal. It is to be noted that the extremists of either side are anxious to include the mildest cases of typhlitis as genuine cases of appendicitis.

5. A good many cases which have been "cured" by medical treatment, relapse. Sometimes these relapses are severe and even fatal, sometimes we are justified in doubting whether they are more than slight attacks of colic, due to dietetic indiscretions and the importance of which has been overestimated by the surgeon.

6. On the other hand, some cases that have been "cured" by amputation suffer from recurrences which would be considered attacks of appendicitis if we did not know that the appendix was lacking. Not a few cases for supposedly primary appendicitis have been performed at which the appendix could not be found. Scott, in the *Bulletin of the Cleveland General Hospital*, April, 1899, analyzes five such cases and holds that insufficient search was made for the appendix. Eitel, in the *Journal of the American Medical Association*, July 29, 1899, states that only six indisputable cases of congenital absence of the appendix have been recorded.

7. Radical operation, although not very dangerous immediately, may be followed by hernia. Francis B. Harrington reported to the American Surgical Association, 1899, the results of 236 cases, 11½ per cent. were followed by true hernia, 27 per cent. more by punctiform hernia or bulging of the scar. Wounds, however, that could be closed primarily, presented only 3½ per cent. of true hernia.

It will be seen from the consideration of these generalizations from statistics that a little manipulation of figures may serve to uphold almost any extreme view. For instance, we are asked in all seriousness to submit every case that presents the initial symptoms of typhlitis or appendicitis to operation for amputation of the appendix. Such a course would, undoubtedly, improve the mortality tables of this operation just as the tables of amputations of legs would be much more favorable if amputation were performed on every person who sprained his ankle. But it is scarcely justifiable to vivisect every person who has a colic since the death-rate of all the cases that extreme operators would like to include as "appendicitis" is not as high as the practically inevitable mortality of the operation itself, the anesthesia and the secondary death-rate due to leakage of the stump, to hernia, etc.

If we decide against advising surgery for every case that presents ominous symptoms in the right lower quadrant of the abdomen, and the great majority of the profession have already so decided, the question forces itself upon our attention, Can a satisfactory differential diagnosis be made between typhlitis with merely catarrhal and non-penetrating appendicitis on the one hand, and burrowing, septic and gangrenous forms on the other? There are two ways of answering this question. One is for surgeons and physicians to separate into hostile camps and to attack each other with ridicule and invective if an apparently mild case suddenly develops unfavorably, or if a case operated on within twenty-four hours from the beginning of symptoms dies, or if an operator of judgment and skill is unable to find the appendix, or if he operates with the diagnosis in doubt between appendicitis and ruptured tubal pregnancy and finds an intussusception. None of these are imaginary cases and we all know what difficult problems of diagnosis and prognosis may be concealed within the abdomen. I have seen two clinically typical cases of biliary obstruction prove to be appendicitis and have known a surgeon to diagnose the latter condition, cut down on a normal appendix and, afterward at the necropsy, find a gall-bladder full of pus. Surgeons have warned particularly against the diagnostic errors that may follow the lack of pain and inflammatory reaction of gangrenous appendices and the sudden relief of symptoms that may be due to the rupture of an abscess and the beginning of a septic general peritonitis. But, with all allowance for puzzling cases, it is safer for a man of reasonable skill and experience to fit the treatment to a discriminating diagnosis than to adhere to any routine policy for or against operation. Occasional unfavorable results, due to misconception of the pathologic state are inevitable, but no more so than for any other part of the body.

It is unnecessary to review at length the diagnostic points common to appendicitis and typhlitis. The differential diagnosis between medical

and surgical cases, as previously defined, rests on the following considerations:

1. Temperature. If, when the case is first seen, it is above 102° F., unless a hysteric element or some other extrinsic factor is evident, or if the tendency is upward, operate. A temperature of even 100° F. or 101° F. that continues into the second day, usually indicates operation. If the case is seen late the up-and-down of a septic fever must not be confused with malaria.

2. Pulse. Gangrenous and septic processes, anywhere in the body, are apt to be marked by a rapid, feeble pulse, without rise of temperature; 90 to 100° F. may be taken as an arbitrary safety-line, with due allowance for age, sex, temperament, etc.

3. Blood. Marked leucocytosis indicates operation, but little attention should be paid to leucocytoses of less than 20,000, enough, for instance, to be readily detectable in the stained slide without enumeration. A differential count should also be made in order to be positive that the polymorphous cells are increased.

4. Local tenderness. In acute cases it is not always possible or advisable to feel the appendix. Muscular rigidity of the right lower quadrant of the abdomen is more significant than general or unilateral reflex as indicating a focus of inflammation. It is not usually possible, by palpation alone, to distinguish between the appendix and a tube or ovary. Typhoid ulceration, general typhlitis, etc., produce less muscular reflex than a focal point of disease. Care should be taken not to concentrate the patient's attention on any one part of the abdomen, but to ascertain whether there is any marked difference between the right and left sides, whether the tenderness is diffused or sharply localized, etc. Sometimes the point of maximum tenderness moves with an irritating fecal mass—a favorable indication.

5. Vomiting, with considerable nausea, but almost projectile in type, usually indicates some focal disturbance in which the peritoneum is involved. It may occur in biliary obstruction, in disease of the uterine adnexa, of the appendix, or it may be due to obstipation with expansion of part of the bowel causing tension of the peritoneum, or to some pinching of the peritoneal coat along with external compression of the bowel. Vomiting of this type is not frequent in general inflammatory conditions of the cecum or of the whole colon.

6. Urine. The most important diagnostic constituent is indican. This is to be expected to be present in excess in most cases of typhlitis and appendicitis. If, with other signs pointing especially to the appendix, indican is absent but the urine contains a sufficiency of urea and other solids so that renal failure need not be considered, we may exclude, with some probability, general typhlitis with stagnation and putrefaction of intestinal contents on the one hand and a large collection of pus on the other.

7. The general aspect of the patient and the consistency of the symptoms. One or more symptoms and signs may ameliorate and yet the patient may present indescribable but ominous signs of serious disease. On the other hand, some one indication may be unfavorable but others reassuring. In a recent case that presented leucocytosis and a temperature of 101.6° F. at the first visit, operation was advised, on the evening of the second day from the beginning of symptoms, but during the night the temperature dropped to normal, the pulse being within the danger limit and the leucocytosis diminishing. Operation was postponed, with the advice of the consulting surgeon, and proved unnecessary.

Granted that the case is a proper one for medical treatment, we must distinguish between subacute and chronic forms, the acute forms belonging to the surgeon. As had already been implied, there can be no separation of typhlitis from appendicitis. The main danger is from the latter, the main and almost the sole treatment must be directed to the former, although the principle of continuity of tissue explains why treatment of one part of the mucous membrane may modify adjacent parts. Our aim is two-fold: (1) To render the intestinal contents as unirritating as possible; (2) to protect and medicate the cecum.

In subacute attacks, as in most comparable diseases, nutrition may be neglected and we may proceed without embarrassment to render the intestinal contents as scanty and as aseptic as possible. All food should be discontinued for at least twenty-four hours, but water may be given freely unless there is some special contraindication such as the occurrence of vomiting after drinking. At the beginning of an attack purgation should be accomplished by the administration of small doses of calomel, every hour, for five or six doses, following with a saline and, in most cases, by a hot enema of approximately physiological salt solution. While magnesium sulphate is a favorite and usually a satisfactory cathartic, there are other salines which are more agreeable to the patient which are less likely to produce nausea and excessive peristalsis and which are just as effective, at least if given in a slightly larger dose. Rochelle salt, Seidlitz powder, effervescent preparations of magnesium citrate and sodium phosphate are in this category. If there is griping, oil of cloves or cinnamon, with or without small doses of atropine, may be used. Heretofore, nothing has been said of appendicular colic. If severe, so that we may reasonably infer the presence of a calculus, it is much safer to resort to surgery. If mild, so that we may suppose that there is present merely a plug of mucus and epithelium, atropine will relieve the spasm while, in small dose, 0.0005-0.0007 mg. (1/100-1/80 gr.), it will not paralyze the smooth muscle. Hot external applications, for instance a spice bag, afford considerable relief, but poultices are perhaps apt to favor the production of pus.

In order to combat the bacillus coli communis —not with the expectation of rendering the intestinal contents germ-free, but of lessening the virulence—an internal antiseptic should be given. Such drugs, for our present purposes, may be crudely classified as follows: (1) Mineral antiseptics: Hg, As, Cu, Ag, Bi, etc.; (2) phenol, resorcin and other slight modifications of the benzol ring; (3) benzoic modifications of this ring; (4) salicylic modifications of this ring; (5) double aromatics, like naphthalin. At the beginning we avail ourselves of both the cathartic and the antiseptic action of mercury, but it is obviously impossible to continue this drug indefinitely. Arsenic is contraindicated in inflammatory conditions of the bowel, although the cecum is situated at such a distance from the mouth that this objection is largely theoretic. Copper is somewhat irritating, but the main objection to its use is its comparative inefficiency. Silver is out of the question for any purpose, except when we can apply it directly to a diseased part. Bismuth is constipating and not actively antiseptic. While invaluable for chronic cases, it is not available for the subacute ones unless considerable diarrhea is present and, even then, its antiseptic action needs reinforcement. The phenol group are either too toxic or too soluble and too readily absorbable for use in this part of the bowel. The benzoic group —and I have tried most of them—are excellent in theory, but inefficient in practice, foul diarrhea, flatulence, etc., continuing in spite of their supposed action. The double aromatics are quite efficient, although naphthalin is disagreeable to patients. All factors considered, I have been best pleased with the salicylic group, especially with salol and salacetol, which are nearly insoluble in the stomach and whose action is reserved for the bowel. The former is perfectly satisfactory for transient use but the phenol constituent is somewhat dangerous, so that for more than a few days' administration, salacetol is preferred. If 0.25 (4 gr.) is given every three hours, a positive antiseptic action can be expected within thirty-six hours, that is, indicanuria will diminish and flatulence will subside. If there is troublesome diarrhea or tenesmus, the latter indicating an involvement of the rectum, a hot injection of boric acid or borax solution, 4-1000, will usually be efficacious.

When nourishment is recommenced, it should consist mainly of toasted bread and soda crackers, cereals and milk. Prepared foods such as malted milks, albumose-milk, and the various combinations of milk and cereal may be employed. Tea, coffee and chocolate should be allowed only sufficiently to flavor the hot milk with which they should be prepared. Meat and meat extracts and teas should be debarred for several days, both because their extractives add to the surplus of effete matter already in the system and because, in their absence, the colon bacillus experiences a lack of pabulum that diminishes its virulence.

This simple but watchful treatment is usually all that is necessary during the subacute attack. A temperature high enough even to suggest the use of antipyretics is an indication for surgical reconsideration of the case nor should antipyretics be used as analgesics, as we do not wish to obscure a significant temperature. The same may be said of pain which cannot be controlled by hot stupes, hyoscyamus, oil of peppermint and similar mild sedatives which act either to relieve intestinal spasm or putrefaction or both.

After a few days, the temperature should have reached normal and the case may be considered in the same category with the ordinary chronic forms of typhlitis and appendicitis. The latter often seek relief for supposed stomach trouble and may be treated in the most pseudoscientific fashion by lavage, etc., for months, without experiencing relief. Only the routine examination of the abdomen suffices to detect the real condition. If, in these chronic conditions, the appendix is markedly enlarged, feeling like a finger under the abdominal wall or if it forms an irregular tumor, or if the patient is so situated that he will not be within easy reach of skilled surgical aid in an emergency, operation under favorable circumstances, in the intermission, should be urged. While, personally, I should not oppose operation but should rather advise it for milder forms, the incurability of chronic appendicitis which has been claimed by some surgeons does not exist as, in some instances, the palpable appendix may be felt gradually diminishing in size until it regains the ribbon-like condition of the normal organ, while the patient is free from symptoms of disease. Neither is it correct to say that a chronic typhlitis or colitis is generally (or do some extremists say always?) due to the condition of the appendix and that it cannot recover till the appendix is removed. This statement is a reversal of the true order.

The dietetic treatment of chronic typhlitis consists in making the patient nearly a vegetarian. Beef, lamb, sweetbreads, chicken, comprise most of the available meats. Roasting and broiling are almost the only allowable modes of cooking. Preserved meats, fish, shellfish, and pork, are to be regarded with suspicion. Coarse vegetables, as cabbage, onions, carrots, sauerkraut, beans, corn, on account of its harsh seed-coats, greasy preparations of all kinds, excepting clean, sweet butter, cream and olive oil, are to be avoided. An excess of sugar may prove to be an irritant, although not directly concerned in the virulence of the colon bacillus. With a variety of breadstuffs, crackers, but not biscuits (in the American sense), nor pancakes nor other hot breakfast foods, with potatoes, sweet potatoes, pumpkin, squash, peas, green beans, tender lettuce, celery, asparagus tops and the many excellent cereal novelties now on the market, the patient need not suffer for lack of variety. For dessert, fruit free from seeds, skin and core, custards, gelatine puddings and cream dishes, may be allowed. Al-

coholic beverages, tea, coffee and strong chocolate must be avoided.

An important item in the treatment of typhlitis is to insure the proper condition of the intestinal contents. Therefore, the meals should be eaten at regular intervals, at least five hours apart, mastication should be thorough, the dentist's aid should be invoked if necessary and attention should be paid to any defect of gastric digestion.

While rest in bed is absolutely indicated, during the subacute attack, chronic cases require moderate exercise, if for no other reason, to maintain a proper motility of the bowels. In order to upset the stand-pipe constituted by the cecum and ascending colon, in which the intestinal contents have their longest delay while the water is being abstracted from them, it is well to advise the recumbent posture for short intervals several times a day. Heavy lifting, and excessive strain or fatigue of any kind should be interdicted. It should be borne in mind that the greatest benefit of exercise consists in fresh air and rest, not in muscular development. As a rough rule, the patient should be advised not to walk more than three or four miles daily nor to wheel more than ten or twelve, but, in the latter exercise grade, road-bed and direction of wind are more to be considered than distance.

Tonic medication naturally suggests itself. The theoretic objection to arsenic has already been stated. Iron should be used, if needed—and not unless the need is actually demonstrated—only in the mildest forms, such as the saccharated carbonate, the organic imitations of hemoglobin, the vegetable salts, the freshly-prepared albuminate made by mixing the chloride with milk or egg-water. Perhaps the very best preparation is the hemoglobin of rare meat. Bitter tonics are of little use under any circumstances. Strychnine may be used p. r. n.

As a means of direct treatment of the cecum, oil suggests itself as forming a protective dressing. Vegetable and animal oils, although advocated for this purpose, are objectionable as they are changed into soap and glycerin in the bowel and as any excess not thus digested is a stimulant of peristalsis. The ideal emollient—although used internally, it is not a demulcent—is a pure mineral oil which passes the entire length of the alimentary canal without change, which is aseptic if not antiseptic and which is bland and harmless. Odorous volatile impurities should be rigorously excluded and only the denser, lubricating hydrocarbons should be present. Color, save the faintest suggestion of opalescence in reflected light and taste—beyond the peculiar smooth feeling which the patient is apt to call a taste—are evidences of impurity. Pure mineral oil acts as a mechanical laxative without causing irritation either in its direct action on the mucous membrane or by unduly stimulating peristalsis.

As an astringent and protective for internal use, we have practically only one base—bismuth, although cerium is a fair substitute. While there are a number of more or less synthetic bismuth preparations on the market, and while many of these are excellent in the treatment of the small intestine, the need of care in avoiding too active astringents in treating the cecum and the desirability of keeping separate, drugs intended for different purposes, so that the astringent, protective and antiseptic actions may be severally increased or decreased as indicated, has led me to abandon the newer bismuth salts for the carbonate. Partly as an antiseptic, partly for its action in promoting better local blood supply, partly because of its antispasmodic effect—in the true, local sense—menthol is indicated in the majority of cases. The following formula may be used:

℞ Bismuthi subcarb..... 30.0 (℥ i)
Menthol..... 3.0 (gr. xlv)
Pure petroleum.....450.0 (℥ iv)
S. Fifteen c.c. (tablespoonful) midway between meals and at bed-time.

In this prescription the menthol is in solution, in the mineral oil, the bismuth merely in emulsion so that a shake label is necessary. The time of administration is selected so as to interfere as little as possible with gastric digestion and lavage practised on patients who have had some concomitant gastric catarrh has shown that the emulsion is rapidly passed through the pylorus so that it does not appear in the wash-water, five hours after a meal. In any particular case it is impossible to prophesy just how far the laxative tendency of the oil, the constipating tendency of the bismuth and the state of the patient's bowels will balance. Sometimes it is necessary to reduce the bismuth or to discontinue it altogether for a time. Sometimes the oil must be stopped. Sometimes a genuine cathartic, like effervescent sodium phosphate, must be given.

Treatment should be maintained quite actively for two or three months, unless after a subacute attack with no previous trouble and promptly taken in hand. If, after five or six months, the patient remains well, is able to endure gradually increasing physical exertion and to relax the diet somewhat without evil consequences and if, most important of all, the appendix remains free from tenderness and is impalpable or ribbon-like, the case can be considered cured. With increasing age, the tendency to typhlitis and appendicitis, as to typhoid fever, diminishes on account of the decadence of lymphoid tissue in the bowel. With this exception, however, it is doubtful whether a patient is ever so thoroughly cured by medical treatment that he is less susceptible to a recurrence of the disease than he was originally, when in a state of health, to the primary attack. The same limitation is applicable to most medical diseases, save those that are distinctly semelincident. Surgery has the advantage of removing the possibility of certain local diseases, including those of the appendix. But it is not possible to carry this plan to its logical limit without subjecting the body to mutilation worse than the danger of disease and while surgery may render appendi-

citis impossible, on the same principle that a blind man cannot be offended by horrible sights, it cannot well obviate the danger of typhlitis and it leaves the patient with a weakened abdominal wall.

THERAPEUTIC STUDIES OF HEROIN HYDROCHLORIDE.

By BENNO HYAMS, M.D.,
OF NEW YORK.

Of the many drugs recently brought to the attention of the general practitioner there is one, namely, heroin, which by virtue of its efficacy and therapeutic value bids fair to assume a permanent and prominent place in our pharmacopœia. This article concerns itself more properly with its salt, heroin hydrochloride, which, owing to its greater adaptability, is preferred in general use.

Heroin hydrochloride, a neutral salt of heroin, a new morphine derivative, is a white, odorless, crystalline powder of slightly bitter taste, freely soluble in water, acetic and dilute sulphuric acids. Its physiological action has been aptly and concisely described, as that of "a respiratory stimulant and a sedative to the respiratory mucous membrane." Its action in relieving cough and dyspnea is prompt; and its ready solubility renders it peculiarly suited for hypodermatic administration, especially where immediate results are required. It has little if any antipyretic properties; its action on the temperature is not marked, prominent or constant. In the majority of my cases I have noticed a slight reduction, but not sufficient to entitle it to practical consideration in this regard.

Respiration is profoundly influenced in all cases. There is a decided diminution in the frequency of the respiratory movements, with a prolongation of the inspiration and an increase of the force of expiration. The elimination of bronchial secretion is promoted, thus aiding in the relief of dyspnea. The pulse becomes slightly diminished in frequency and likewise somewhat fuller. It is in no sense a hypnotic, except that it indirectly relieves the distressing symptoms which prevent sleep. In therapeutic doses there is no disturbance of the gastric functions. Except for a slight nausea noticed in one case no ill-effects were observed. Its action on the intestine seemed to be a slightly constipating one. To overcome this it may be advantageously combined with cascara sagrada.

I have found the drug well borne in both the young and the old, especially so in the former. I consider this a point of special moment. As an anodyne in painful affections it ranks much below either morphine or codeine.

The after-effects which I have noticed have been a slight nausea in one case, dizziness in two cases, languidness in two cases, and a pharyngeal irritation, with constant desire to clear the throat. I may add that none of these sequelæ was of a serious nature and soon passed off without special treatment.

In cases marked by a diminution in the expectoration, the drug may with advantage be combined with either the iodide of potash, ipecac, terpin hydrate, or squill, in such ways as may suggest themselves in each individual case. As mentioned, in cases attended with constipation, the addition of cascara sagrada is effective.

The average dosage by mouth is from 1/24 to 1/6 grain, three times daily. It is preferably given after meals, especially when there is a diminution of gastric secretion, in which condition if dissolved in an acid medium and taken after the ingestion of food it fulfills all requirements. It may be given in powder, pill, tablet, or solution. It is freely soluble in acetic acid and dilute sulphuric acids, and although the former seems to be the solvent most frequently used, I have seen no advantage that it possesses over the latter. After the prolonged use of the drug, as in tuberculosis, larger doses are required. For prompt effect it is employed by hypodermatic injection for which its ready solubility in water renders it especially suitable. Four to eight minims of a two-per-cent. solution represent 1/12 to 1/6 grain, the smaller dose being the average amount necessary. The incompatibilities to its use internally are alkalies and apomorphine.

The following cases are among those in which I have tested the drug, both by mouth and by injection. The diseases treated comprised mostly respiratory troubles, in which cough and dyspnea were the most prominent symptoms. The results obtained were nearly all good, a few excellent, and two failures (diabetes). In bronchitis, especially in the acute variety, it is nearly specific.

Case I.—Mrs. L. N., aged thirty years, married. Family history markedly neurotic. Diagnosis: A nervous form of asthma of five years' duration. The patient is extremely nervous and suffers from frequent exacerbations, coming on irregularly and without known cause. Nasopharyngitis and bronchitis occasionally precede an attack. I was called in to see her for the first time during the last attack. The patient, a well-built woman, presented a typical picture of spasmodic asthma of rather a severe nature. She was sitting up in bed, using all the muscles of respiration to satisfy her air hunger. The dyspnea was most profound. The skin was livid, the face anxious, and the pulse feeble. Auscultation revealed sibilant and sonorous râles over both lungs caused by contraction of the bronchi. Examination was otherwise negative. I at once administered 1/12 grain heroin hydrochloride hypodermically and repeated this in ten minutes. The effect soon became apparent; the dyspnea became less and less; the circulation began to be restored, and in a very short time the patient presented a normal

appearance. For the distressing cough I prescribed the following:

℞ Heroin hydrochloride...0.20 (gr. iij)
Extr. belladonnæ.....0.06 (gr. j)
Pulv. ipecacuanhæ.....0.20 (gr. iij)
Extr. gentianæ.....q. s.

M. ft. tabl. No. xxxvi. Sig., one tablet every two hours.

After three days the cough was greatly improved and in a week had entirely disappeared. No unfavorable effect followed the hypodermatic injection.

Case II.—Mr. R. S., aged sixty years. Diagnosis: Chronic bronchitis. Patient at present complains of dyspnea, pain in the chest, headache, and cough. Temperature 101.8° F.; pulse 100. The most prominent symptom is a wheezing in the upper part of the chest. I administered heroin hydrochloride, 1/12 grain by hypodermatic injection, and continued this dose by mouth three times daily after meals dissolved in dilute sulphuric acid. The injection gave immediate relief and, although the symptoms still persisted, the cough was much relieved and the dyspnea less severe. The patient informs me that for all previous attacks large doses of morphine were necessary to alleviate the distressing symptoms, and that while he was promptly relieved he suffered from the after-effects of the medication. He earnestly assures me that he has experienced none of these under the heroin treatment.

Case III.—Miss E. K., aged nineteen years. Family history negative. Diagnosis: Acute miliary tuberculosis. (?) The prominent symptoms are cough with profuse mucopurulent expectoration, pain in the chest, afternoon fever, night sweats, and general weakness. Beside antituberculous treatment she was put on heroin hydrochloride, 1/12 grain, every two and one-half hours, dissolved in acetic acid. The distressing symptoms were at once checked, and in three days she was greatly improved. The patient has since passed out of observation. I may state that after using the heroin for a few days I substituted codeine, and have found the alternation of heroin and codeine an effective one in some cases.

Case IV.—Mrs. F. H., aged fifty-five years. Diagnosis: Angina pectoris. During the attack I administered hypodermatically heroin hydrochloride, 1/8 grain, in alteration with nitroglycerin. Between the attacks she received iodide of potash. The attacks, which at first were as frequent as eight a day, gradually grew less frequent in number, duration, and severity. As the condition improved the dose was diminished, and the drug finally stopped. Except for a slight nausea no ill-effects were observed.

Case V.—Miss A. B., aged seventeen years. Diagnosis: Acute bronchitis. The principal symptom is an irritable cough. I prescribed heroin hydrochloride, 1/12 grain, and also the iodide of potash, 3 grains, every three hours, and an additional dose before retiring. At the end of six days the cough was under control.

Case VI.—A. S., aged twelve years. Diagnosis: Acute bronchitis. The chief symptoms are pain on inspiration and cough. He received tablets of heroin hydrochloride, 1/12 grain, three times daily after meals. This dose not being large enough, it was increased to 1/12 grain, every two hours. As a result the boy began to mend quickly, and the cough soon disappeared.

Case VII.—W. G., aged four years. Diagnosis: Malaria, scrofula, and chronic bronchitis. In addition to antimalarial and tonic treatment he received heroin hydrochloride, 1/36 grain, three times daily. The symptoms were soon under control.

Case VIII.—Mr. W. B., aged twenty-seven years. Diagnosis: Acute bronchitis. Cough with diminished expectoration was present. He received heroin hydrochloride, 1/8 grain, with iodide of potash, 5 grains, three times daily. Alleviation of the symptoms occurred in a few days.

Case IX.—Mr. D. L., aged thirty-three years, weight 122 pounds. Diagnosis: Pulmonary tuberculosis. Duration of disease three years. The patient complains of severe pain in the right chest, a hard, persistent cough worse at night, diminished expectoration, night-sweats, insomnia, slight shortness of breath, fever, and general malaise. Examination of the sputum shows a moderate number of tubercle bacilli. Percussion reveals marked dulness over the upper portion of the right lung anteriorly. There is also increased voice and vocal fremitus; fine moist râles are heard over the area of dulness. The heart shows the lesions of mitral stenosis. Among other treatment he was given heroin hydrochloride, 1/6 grain, three times daily, in combination with iodide of potash, 5 grains. In three days the cough was less marked and the expectoration became more abundant. On the seventh day the cough had nearly disappeared, and that night for the first time in a long while he slept uninterruptedly. The night-sweats and dyspnea had disappeared. This case shows the very great value of heroin in cases of pulmonary tuberculosis. Not only is its action in relieving the cough and the dyspnea noteworthy, but also its action in causing a disappearance of the night-sweats; and above all, notwithstanding the presence of a well-marked cardiac lesion, relatively large doses were used without any apparent dangerous after-effects.

Case X.—J. S., aged five years. Diagnosis: Whooping-cough. He was given a prescription containing heroin hydrochloride, dilute sulphuric acid, and tincture of belladonna. The case has not been sufficiently long under observation for absolute deductions to be made, but it appears to me that this combination is very effective in checking the number and the duration of the paroxysms, and, while not curative, allows the disease to run a mild course.

Case XI.—Miss A. L., aged nineteen years. Diagnosis: Acute bronchitis. Hacking cough, profuse expectoration tinged with blood, dyspnea, pain in the chest. Temperature 102° F., pulse 100. I prescribed heroin hydrochloride, ipecac and phenacetin. The symptoms at once improved, and in ten days the cough was gone.

Case XII.—Mrs. J. B., aged fifty-three years. Diagnosis: Chronic bronchitis, with coexisting nasopharyngitis. Expectoration scanty, dyspnea, cough, general weakness. Heroin hydrochloride, 1/6 grain, three times daily, was administered. In a week the patient was much improved and the cough was nearly gone.

Case XIII.—Mrs. H. B., aged forty-five years. Diagnosis: Diabetes mellitus of eight years' standing, with complicating nephritis, and gangrene of one of the toes of the left foot. Among other treatment she received heroin hydrochloride, 1/6 grain, three times daily. No good results were noticed.

Case XIV.—Mrs. B. R., aged fifty-nine years. Diagnosis: Diabetes mellitus of about fifteen years' duration. No complications. She was placed upon a proper diet and given codeine without any benefit. Heroin hydrochloride was then substituted with the same result. The drug seemed to have absolutely no effect on the progress of the disease. It seems to me, as far as my limited experience with the treatment of this disease by means of heroin is concerned, that it is of the same doubtful efficacy as codeine, etc., and all the remedies which have been landed as curative of this condition.

To sum up briefly: Heroin hydrochloride is indicated in coughs of all kinds, whatsoever the cause, in dyspnea and in all catarrhal inflammations of the respiratory mucous membrane, and in all cases in which morphine is contraindicated. In acute bronchitis the combination of heroin hydrochloride with ipecac seems to be particularly effective. In chronic bronchitis and in asthmatic conditions the addition of the iodide of potash is of much value. In whooping-cough, with belladonna, its action proved palliative. In diabetes my results have been poor. In pulmonary tuberculosis, I regard this drug as one of the best remedies with which to combat the cough, dyspnea and night-sweats. A drug which can be used for long periods without dangerous sequelæ, and at the same time exerts the effect before mentioned, is peculiarly suited to the treatment of this often protracted disease.

50 W. 114th Street.

A NEW OPERATION FOR HEMORRHOIDS.

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There is scarcely any condition in which the surgeon can assure relief by operation with as great certainty and with as little risk as in that of hemorrhoids, in spite of the impossibility, due to the prevalent local uncleanliness of the bowel, of carrying out strict antiseptic precautions.

The factor which is probably most responsible for this usually favorable termination is the dilatation of the sphincter which accompanies each operative procedure. This has long been recognized as an efficacious method of treatment in all

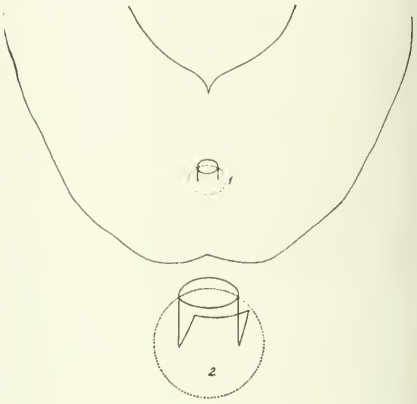

Fig. A. (1) Preliminary Incision. (2) Incision magnified, heavy lines represent cut surfaces.

those cases of hemorrhoids in which the development of the pathological procedure is such as to demand a radical operation for its relief. It acts by providing a greater freedom of anastomosis between the portal and systemic radicals, which, in the ordinary case, is frequently hampered by the contraction of that muscle resulting from a more or less inflamed condition, if not actual ulceration, of the mucous membrane of the lower part of the bowel. This same procedure is also of the greatest advantage in that it provides absolute rest and thereby favors the healing of any granulating surface after operation, eliminating the danger of protracted and obstinate ulceration. Stretching of the sphincter also favors the rapid healing of the operative field, and this is greatly to be desired in that the danger of cicatricial contraction after a protracted course of healing by granulation is prevented.

Stretching of the sphincter does not, however, always secure the rapid and complete healing described. Occasionally a condition of obstinate and protracted ulceration complicates convalescence and requires a longer interval of rest, afforded by the complete division of the sphincter, before healing can be secured. Such an unfortunate termination is at times followed by the development of stenosis requiring the occasional passage of a bougie to ensure the patency of the anal orifice. This accident may follow any one of the operations for hemorrhoids. In a case, recently observed, it followed an Allingham

operation, where the removal of the hemorrhoids resulted in a considerable sacrifice of the overlying mucous membrane. It occasionally develops after a Whitehead operation, where a ring of cicatricial tissue has resulted after a more or less protracted course of healing, from the retraction or sloughing of the sutured mucous membrane. After the procedure by the clamp and cautery, the healing by granulation of the denuded portions of the mucous membrane may give rise to similar trouble.

The possibility of this complication after the usual operations for hemorrhoids induced the writer to devise some means whereby prompt healing might be secured and the danger of stricture reduced to a minimum, without impairing the serviceability of the operation.

The following procedure, which has been tried during the past six months in the Presbyterian Hospital, of this city, has given excellent results in a number of cases:

After the customary preparation and with the usual precaution of as perfect cleanliness as is possible under the circumstances, an anesthetic is administered, and, the sphincter having been stretched, the hemorrhoids are allowed to protrude. Each advanced hemorrhoidal area is treated similarly as follows: Opposite the base of the hemorrhoid, parallel with and corresponding to the mucocutaneous junction, a curved incision is made and carried upward in the same plane as in a Whitehead operation beneath the pile-bearing area until the base of the hemorrhoid is reached. A second curved incision is then made in and through the mucous membrane, forming an ellipse with the first-mentioned incision and including within this ellipse any area of ulceration at the base of the hemorrhoid that may have developed as a result of the irritation

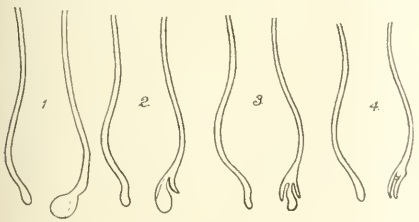

Fig. B. (1) Showing hemorrhoid, dotted line of first incision. (2) First incision completed, second incision, dotted line. (3) Second incision completed. (4) Hemorrhoid cut away, surfaces ready for suture.

to which the exposed surface of the mucous membrane overlying the hemorrhoid is subject.

From the junction of the two curved incisions, that is, from each pole of the ellipse, an incision is carried vertically upward through the mucous membrane only and the resulting quadrangular flap of mucous membrane is reflected from the surface of the underlying hemorrhoidal area, having its base of blood-supply superiorly. After the dissection of this flap of mucous membrane, the same vertical incision is deepened through the hemorrhoidal tissue proper, the resulting hemorrhage being slight owing to the direction of the incision, thus forming a rectangular mass of hemorrhoidal tissue which is transfixed at its base with stout catgut—if necessary with chromicized gut; the ligatures are then tied tightly and the hemorrhoidal mass removed. The rectangular flap of mucous membrane is then stitched to the skin, and the retention of any discharge prevented by cutting the catgut ligature long and allowing the ends to protrude below between the sutures, thus acting as a drain. This same procedure is repeated in not more than two other places where the development of the hemorrhoids is most pronounced. At the conclusion of the operation, a dressing of sterile gauze is placed over the suture line, a large tube, surrounded by iodoform gauze having been previously introduced upward into the lumen of the gut to facilitate the exit of any gas or of accumulated fecal material.

By this method prompt union is usually secured, because the intervening portions of mucous membrane that have not been disturbed by the operation prevent the retraction of the flaps of mucous membrane that have been raised from the surface of the hemorrhoids. The situation of the suture line is also favorable to a prompt union, inasmuch as it is placed close to the anal ring and, therefore, is easily kept protected by the application of either sterilized or iodoform gauze. Sloughing of the flap of mucous membrane is very unlikely as the vascularity of the flap is most abundant and any pressure by the accumulation of the discharge is prevented by the drainage of strands of catgut which project below through the suture line. Should healing, however, take place by granulation, occurring throughout the entire field of operation, each resulting cicatrix would then be separated by a bridge of healthy mucous membrane which would effectively prevent the development of subsequent contraction and stenosis.

An objection may be raised to the effect that in those cases in which the entire circumference of the anal orifice is involved, a portion of the hemorrhoidal area is not removed by this operation. This objection obtains in only the most advanced cases, as after this procedure the intervening portion of hemorrhoidal tissue rapidly shrinks, for the reason that it has been subjected to the benefit of the stretching of the sphincter, and that its condition of venous engorgement is materially lessened by the division and ligation of those vessels supplying the hemorrhoidal area removed.

Another advantage of this procedure consists in the fact that it permits of the complete excision of all areas of ulceration at the base of the hemorrhoids and thereby lessens the possibility of subsequent infection, necessarily favoring, at the same time, prompt union of the divided parts.

48 W. 36 Street.

A PLEA FOR THE EARLIER RECOGNITION OF SQUINT IN CHILDREN BY THE FAMILY PHYSICIAN AND THE EARLIER APPLICATION OF THE METHODS OF TREATMENT.[1]

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It is a well-known fact that a large proportion of the cases of squint met with in ophthalmic practice begin in childhood. The period of most frequent occurrence is that age when the little one begins to make accommodative effort, as in looking at pictures, picking up blocks, etc., usually at about the age of four or five years. Some cases are, of course, congenital; others the acquired within the first few weeks of life and others still are paralytic and may appear at any time; but the greater number become manifest about the time mentioned.

The family physician, as a rule, has his attention directed to the condition shortly after its appearance. If he is indifferent and says (as I have known to be done frequently), "Oh, the child will outgrow it, let it alone," in most cases the squint will become permanent and a portion of the visual acuity of one eye may be lost. On the contrary, if the proper treatment be instituted much can be done toward relieving the deformity and at the same time preserving the useful vision of both eyes, as well as in avoiding the many neurotic ailments to which eye-strain frequently gives rise.

It is not within the province of this paper to review the different causes of squint. It might perhaps be well to add, however, that it is not caused by looking at a lock of hair falling to one side of the face, by fright, by imitation of another cross-eyed person, or, as suggested to me by the mother of one of my patients, by "eating a dish of cold beans purloined from the kitchen pantry."

The larger number of cases, as previously intimated, depend upon some disturbance between the relation of accommodation and convergence, a condition generally brought about by some error of refraction. It would seem, therefore, that the proper procedure in all cases of squint, excepting, perhaps, those of paralytic origin, would be to determine whether there is present any error of refraction. If one is familiar with the use of the ophthalmoscope this can be readily done; if not, one drop of a solution of atropine, four grains to the ounce, should be instilled into each eye night and morning and the child's eyes protected from strong light; in fact, dark glasses should be worn out-of-doors if the child is old enough to keep them on. Should the squint disappear, or become very much better, it will prove that an error of refraction is present in the case, the strain upon the accommodation having been relieved by the action of the atropine upon the ciliary muscle, and the patient should be carefully glassed. Should the patient be too young to wear glasses, the atropine instillations, in half strength, may be kept up at varying intervals in the meantime in order that the excessive accommodative efforts may be relieved. The youngest patient for whom glasses were prescribed by the writer was three years of age, a case of convergent squint with Jacksonian epilepsy, in which the squint disappeared and the number of convulsions was markedly reduced. Frequently littles ones from three and one-half to five years of age have worn glasses and complete correction of their squint has resulted in a comparatively short period of time.

If the wearing of glasses for several weeks fails to correct the defect a system of muscle gymnastics known as "orthoptic exercises" should be employed. The apparatus required is an ordinary box stereoscope with a series of double pictures. The patient is first taught to recognize both pictures on the cards, or to see double, thus showing that both eyes are used at the same time, and after this has been accomplished to fuse the two pictures into one. This method is of very little use in cases of high degrees of squint in which the glasses produce but little change; but in cases of low degree, or in cases much benefited by the wearing of glasses, or in cases of residual squint after operation, it is decidedly of the greatest value.

Should the wearing of the proper glasses and the faithful systematic employment of orthoptic exercises fail to cure the squint, recourse must be had to operative measures. This usually consists of a tenotomy of one muscle or an advancement of its opponent, or both, depending upon the amount of deviation to be dealt with, the variety of the squint, the strength of the opposing muscle, and the condition of the visual acuity of each eye. If the defect is convergent the eyes should not be entirely straightened at the operation, but a small amount of residual squint should be permitted to remain, as there is always a slight after-tendency to divergence.

For the same reason in operating for divergent squint it is better to produce a very slight convergence.

As to the age of the patient, it is best to wait until the child is about six years old, though there are a few cases in which earlier operation seems advisable.

These few brief notes give but a meager outline as to the methods to be followed in the treatment of concomitant convergent squint and are offered principally to direct the attention of the family physician to the condition upon its first appearance, so that it will not be put aside as something to be outgrown, but will receive the prompt attention it deserves.

[1] Read at the fiftieth annual meeting of the Pennsylvania State Medical Society, Wilkes-Barre, September 20, 1900.

THE TREATMENT OF PNEUMONIA WITH ANTI-PNEUMOCOCCIC SERUM.[1]

By EDWIN ROSENTHAL, M.D.,
OF PHILADELPHIA.

THE bacterial origin of disease brings as a natural sequence the study of its prevention and cure. In the province of therapeutics the most surprising and positive results have been shown, and medicine has passed from what was always termed the "expectant" method of treating disease to what may now be termed the "positive or specific" method.

The history of these discoveries is too new to be mentioned and it would be a waste of time—in a ten-minute paper—to even quote from them. It is taken for granted that the knowledge of the etiology of pneumonia is so well known that to take up the subject of its treatment with pneumonic serum needs no introduction into its cause, pathology or course. One point, however, must always be conspicuously borne in mind, and that is the clinical history of each case; in applying the remedy one should always know whether the disease is a primary croupous pneumonia or a secondary catarrhal pneumonia. The history of each case varies and no treatment can be termed specific, but the nearest approach to this can truly be claimed for the serum treatment. In the type of the disease one can see its indication and in a measure control the result; with the knowledge of its incubating signs one can prevent, or, if that be impossible, abort, and when it is too late to prevent or abort, one can, in a measure, curtail its duration, or if the disease is met at its height, its course can be directed to a favorable termination.

Clinically, pneumonia is met with as croupous pneumonia, a self-limited disease which should end favorably, and catarrhal pneumonia which has no limitation. In this latter type, if there is a remedy that can not only cure the disease, but curtail its duration, such a remedy should receive most thorough investigation.

A very great and essential factor in all histories of catarrhal pneumonia is told in the word —complication. While croupous pneumonia may be a simple and single infection, that of catarrhal pneumonia is most complex, and disappointment in any method of treatment is due to the lack of knowledge as to what this complication may be. Most frequently catarrhal pneumonia is seen as a complication of measles, and it might be added that no disease is exempt. The knowledge of this fact should materially aid in its early recognition and treatment. Where pneumonia comes as a complication or sequel to other diseases, the antipneumococcic serum can be used at once, and the addition of the antistreptococcic serum is as needful, for in these instances pneumonia is most generally the result of streptococcic infection, and a case of this kind is the common history of mixed infection.

What is the remedy? Like diphtheria antitoxin and other medicaments of this class, antipneumococcic serum is obtained from the blood of other animals, notably the horse. The following is a brief outline of the methods employed in the production of antipneumococcic serum: A virulent culture of pneumococci is first secured and its virulence is greatly increased by being passed through rabbits. Instead of preparing bouillon, as for diphtheria and other antitoxins, the pneumococcus itself is grown directly upon glycerin agar. The live germs are employed in intravenous injections in the horse, differing from the production of diphtheria antitoxic serum and antitoxins generally, as usually it is the toxin which is injected and not the germ itself. On account of the virulence of the germs, it is first necessary to subject them to a temperature of 60° C. for one hour in order to destroy a portion of their activity. The dose is increased at each injection, the live germs, without heating or attenuation, being used in the later injections. The animal is treated for from three to four months before its blood is taken and the serum separated.

As in all serum treatment of diseases, the earlier it is used the more certain is the result, and if used early enough or at a favorable moment it so changes the course of the disease that the different stages close together; the process is curtailed or aborted, and from a state of high inflammation with all its symptoms of high temperature, quick pulse and respiration, comes a rapid crisis, the history of a favorable termination of croupous pneumonia, but brought about by the serum treatment within twelve to twenty-four hours instead of five to nine days, the time otherwise required.

The method of administering the serum is by hypodermic injection into the tissues of the body. I have chosen, in all instances, the sides of the chest, and even the affected side. After the parts are thoroughly cleansed with soap and water, and then with sublimated cotton or gauze, soaked in alcohol, the serum is injected by means of an antitoxin syringe, and the aperture is closed with iodoform collodion.

The indications for its use are as follows: The temperature, pulse and respiration should be taken as a guide, and the severity of these symptoms governs the method and size of dose and its repetition. If, for instance, the temperature be 103° F. or over, the pulse 140 or over, and the respiration 48 or over, I begin with 20 cc.; where the type is more severe, with 40 cc. of the serum, followed every four hours by double the initial injection, until the disease is under control, as manifested by a decline in temperature, a slower respiration, disappearance of pain, improvement in the pulse and a change for the better in the general condition.

If the case be croupous in character, this

[1] Read before the State Medical Society of Pennsylvania, Wilkes-Barre, Sept. 18, 1900.

method alone is sufficient and the first twenty-four hours or perhaps forty-eight hours show the effect of the remedy. Where, however, pneumonia is secondary to another disease, the antipneumococcic serum alone is not sufficient. Therefore, the injection of antipneumococcic serum should be followed in four hours by one of antistreptococcic serum.

The use of the serum does not in any way interfere with any other treatment, nor is it harmful in any quantity at any stage of the disease. At the same time suitable remedies should be employed and the method pursued with which one is most familiar. As an example, wet packs and the use of digitalis, whiskey, ammonium carbonate, strychnine and the like, may be persisted in, and indeed any indication which the exigency of the case may demand can be applied without regard to the use of the serum. If the serum be used and additional medication be pursued, the results from such medication may not only be satisfactory but quickened, showing the specific action. When used early, that is, before the inflammation has become so marked as to pass the stage of resolution, the antipneumococcic serum has no influence in curtailing the progress of the disease, and the antistreptococcic serum may be necessary to prevent the results ensuing.

A most pertinent rule must be appended to be followed by those who are not familiar with the commercial history of the serum. None of the foreign antipneumococcic serums or antistreptococcic serums are reliable, since they are too old when they reach the practitioner in this country, it being well known that these serums do not retain their action beyond three months, under the most favorable conditions.

One must always remember that it is not the one dose nor the one bottle that will cure, but sufficient quantities must be used until results are obtained, whether this is done with one dose of 20 cc. or with twenty bottles of the remedy.

CLINICAL MEMORANDA.

SEPTIC SYNOVITIS OF KNEE-JOINT: EXTENSIVE DRAINAGE FOLLOWED BY EXCISION OF ENTIRE SYNOVIAL MEMBRANE: RECOVERY.

By CHARLES A. POWERS, M.D.,
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On Tuesday, September 27, 1898, I was asked by Dr. J. D. Nye, to see B. S., a girl of thirteen years who gave the following history: She had always been well with the exception of scarlet fever in December, 1897, from which a complete recovery had been made. She had never had difficulty in walking, she had had no trouble whatever with either of the lower extremities. In May, 1898, she fell several feet from a stand which collapsed in the City Park, but she sustained no immediate inconvenience and suffered no difficulty in locomotion as a consequence.

On Tuesday, September 20, 1898, she was in her usual health and rode a bicycle in the evening. On Wednesday, September 21st, she was suddenly seized with severe pain in the right knee. There was some swelling of the joint. She remained in bed and was seen in the evening by Dr. Nye, who found her with a temperature of 104° F. and a pulse of 100. The right knee was moderately swollen and exquisitely tender and painful. The usual local and general measures were employed but the joint continued to swell. The temperature during the succeeding week ranged between 101° F. and 103° F., the pulse running from 100 to 120 per minute.

She was first seen by me, as said, on Tuesday, September 27th, just one week after the onset. At this time the mouth temperature was 102.5° F.; the pulse 120; the right knee-joint was much swollen, exceedingly tender and painful. The patient had been receiving a fair amount of morphine; she was very restless and nervous.

A diagnosis of suppurative synovitis was made, drainage advised and at once carried out under ether at St. Luke's Hospital. An exploring needle passed into the joint at its outer aspect withdrew pus. Incision of the joint was made at the outer side, beneath the patella, another incision at the inner side of the joint, and a third incision above at the upper margin of the synovial pouch. These incisions were according to the ordinary method of Hueter. The joint was thoroughly washed, evacuating shreddy fragments of pus and broken-down tissue. Large tubes were inserted, draining the joint beneath the patella in triangular fashion. The temperature and pulse did not come down after this irrigation and drainage, but remained high. The dressing was changed under chloroform at the end of forty-eight hours. The wounds looked rather sloughy, there seemed no further purulent secretion in the joint, but thick broken-down tissue was evacuated. Six hours later the temperature was 104° F.; the pulse 126 and feeble. The patient seemed desperately ill, there was marked albuminuria, the lips were dry, the face was anxious.

Further operation was advised and the knee-joint was opened by the usual curved incision, under ether, at 9 P.M., September 29th. The entire synovial membrane was dark greyish in color, much thickened, septic and semigangrenous in appearance; the lower end of the femur and the upper end of the tibia seemed free from disease. The entire synovial membrane was carefully trimmed out, together with a liberal layer of adjacent tissue; the semilunar cartilages and crucial ligaments were removed. The entire upper recess of the synovial pouch was cut away and marked attention was paid to the posterior aspect of the joint, the tibia being well dislocated forward. The patella was removed.

After thorough irrigation the flap was lightly tacked below and the cavity well packed with iodoform gauze and plain sterile gauze; a large dressing was applied. At the close of the operation, which occupied thirty-five minutes, the pulse was 150 and very feeble. A large saline infusion was given, the extremities bandaged and elevated and the patient was vigorously stimulated with strychnine, atropine, coffee and whiskey.

Her condition on the following morning was fairly good, the pulse was 130; the temperature 102° F. The knee-joint was free from pain for the first time since the invasion of the disease. The dressing was changed under chloroform every three or four days for some four or five weeks. The subsequent course was slow, but uneventful. At the end of three months the entire wound was solidly healed, the limb being ankylosed in a position a trifle flexed. I am unable to account for the septic invasion of this girl's knee-joint. There was no evidence of wound or scratch on any part of the extremity. It seems hardly possible that it could follow at such a remote day upon the scarlet fever of the previous year. Unfortunately a bacteriological examination of the pus was not made at the time of operation.

It is needless to say that septic inflammation of the knee-joint is a condition of the greatest possible gravity. Many cases will recover under simple drainage and irrigation of the joint, the synovial cavity being divided into several pouches or parts for drainage. Hartley has devised a method of draining the joint posteriorly and an excellent suggestion is that of Mayo of Rochester, Minnesota, who makes a transverse incision at the front of the joint, saws the patella in two, partially dislocates the tibia forward and in this way is able to reach and pack with gauze all portions of the synovial cavity. After granulation is established he sutures the sawn surfaces of the patella, and in two cases out of four has been able to obtain one-fourth range of normal motion.

I can report on but three personal cases in addition to the foregoing. One of these, a very recent case, was in a man of forty-five years who accidentally thrust the point of a pair of scissors into the lower part of the knee-joint. I saw him with his attending physician on the fifth day. At that time his temperature was 102° F., his pulse about 90. He had been delirious from the first day. His knee-joint was much swollen, very tender and painful. Exploration showed it to contain pus. It was very thoroughly drained after the method of Hueter, but his condition did not tend to improve. It was at no time such as to warrant either excision or amputation. He continued in marked delirium and died of progressive sepsis two weeks after operation. My other two cases recovered, one with a stiff joint and the other with about one-fifth range of motion.

THE INFLUENCE OF MEASLES AND ERYSIPELAS UPON EPILEPSY, WITH REPORT OF CASES.

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Evidence of a negative character, or that which goes to positively disprove an existing theory, is usually not especially desired by many investigators of disease. But in the analysis of an existing theory one must necessarily weigh negative as well as positive evidence in order that a working hypothesis may be obtained which shall be true and not misleading. This is noteworthy in considering the influence of infectious and febrile disorders upon a preexisting epilepsy.

The subject is an old one, even dating from the time of Hippocrates, who noticed that a preexistent epilepsy or mental disorder was frequently favorably modified by an acute traumatic or febrile process. Since that time many investigators have written upon this subject. Of late the general opinion seems to be that an infectious process in the course of a chronic nervous or mental disease is advantageous and should be encouraged to the point of establishing such an element for curative purposes. This has especially been advocated during the past two or three years by some French and Italian writers, who have urged the establishment of malaria in epileptics and, when the epilepsy is recovered from, the cure of the malaria by the exhibition of quinine.

In our experience of several years with epileptics, we have known but two cases in which the epilepsy was notably bettered by an intercurrent disease, while, on the contrary, we have seen many epileptics in whom the disease has been made much worse by such accidents or complications. Now and then we still see a report of an improvement of a neurosis under some accidental complication. Experience of this kind is fairly common to the neurologist. The idea has been quite contagious, and even the general public is imbued with it. In consequence many people believe that insanity and the degenerative neuroses, such as epilepsy and idiocy, may be permanently cured by contracting erysipelas, pneumonia or chronic malaria.

With the idea of presenting some testimony in regard to this subject, we wish to report in abstract some cases that have suffered from epilepsy for variable periods of time and with varying degrees of severity, during the course of which measles and erysipelas have occurred. The notes and comments upon these cases are as follows:

Cases of Measles.

Case I.—J. S., girl, six years of age; epilepsy of grand-mal type since two years of age, which resulted from an infantile cerebral palsy. She

contracted measles March 28, 1900. The incubation period was unknown; patient undoubtedly became contagioned at her home prior to being admitted to the Colony, as the symptoms made their appearance a few days after admission. On third day rash appeared on the face, forehead, and neck, and on the following day the rash appeared over the entire body. The blotches were irregular, reddish and crescentric; the face was swollen; the rash disappeared on pressure; it persisted four days; the eruption was that of German measles. Temperature was 103.2° F. at onset; within twenty-four hours the temperature had become nearly normal, but the rash persisted as noted before. The pulse was 130 at onset, ranging from 145 to 96 during the five days. Desquamation was slight—fine scales over the flexor aspect of the extremities. Patient had no complications except a slight laryngitis; there were no sequelæ. Treatment was by isolation, confinement to bed, liquid diet, tepid sponging, enemata, diuretics, camphorated oil and vaseline. Recovery was complete in eleven days from onset.

Patient had no convulsions during the attack of measles; she had suffered from two severe convulsions for the same period of time prior to the onset of measles. For an equal period after, patient had no attacks; but now, some five months after, the attacks are once more frequent and severe. While the measles appear to have temporarily stopped the epileptic attacks, no permanent good resulted from the same.

Case II.—E. S., girl, six years of age, epilepsy began at seven months of age and is of grand-mal idiopathic type. Patient contracted measles April 15, 1900. The period of incubation was about ten days. The infection began with slight fever and coryza. The symptoms were all mild and the patient was not very ill. The rash began on the first day, slightly on the face, and spread over entire body in twenty-four hours. It was fully developed in thirty-six hours. The rash was irregular, reddish, crescentric in outline and places and disappeared on pressure. On the third day the rash began to fade, and entirely disappeared by the fifth. The temperature was 99° F. at onset and never reached over 100° F. It was normal after the third day, at which time the rash began to fade. The pulse ranged between 80 to 92 throughout. The desquamation was so slight as to be scarcely perceptible. There were no complications or sequelæ. The treatment was by isolation, confinement to bed most of the time, liquid diet, enemata, camphorated oil and vaseline. Recovery was complete in nine days.

During the attack of measles the patient had no convulsions; she had had no convulsions for an equal period before the measles. For an equal period after, no attacks presented themselves; but since then, for the past three months, convulsions have been as frequent as before. In so far as the patient had no attacks for an equal period prior to the onset of the measles, as well as none for an equal period after, it is difficult to tell just what influence the measles had upon the preexistent epilepsy; but certainly it has not materially modified the course of the neurosis.

Case III.—F. S., girl, six years of age, epilepsy began at three months of age. Patient contracted measles April 18, 1900; the period of incubation was about thirteen days, patient being exposed before the complete recovery of Case I. The temperature at the onset was 100.8° F.; coryza, redness of eyes, running at nose, slight cough, which became more severe during the next two days, were present. The eruption began on the second day, with small red papules on the face and forehead, and became larger, irregular, blotchy or mottled, and crescentric in outline on the third day. On the fourth day the eruption had spread over the entire body; on the fifth it began to fade and entirely disappeared on the seventh day. The temperature reached the maximum of 104° F. on the third day. It ended in crisis the fourth day. The pulse was irregular at the start, ranging from 95 to 140. Its ranges were not parallel with the fever-curve. Desquamation of fine bran-like scales was complete in three days. There were no complications or sequelæ. The treatment was by isolation, confinement to bed, liquid diet, diuretics, enemata, tepid sponging, camphorated oil and vaseline. Recovery was complete in ten days.

On April 19th, at the time of maximum of temperature, patient had one severe attack at 11:00 P. M.; another at 1:00 P. M., and still another at 3:20 P. M., all of which were of grand-mal type. The three attacks all occurred on the second day of illness, before the rash became well marked. Patient had no convulsions for an equal period prior to the onset of the measles, and had none for the same length of time after; but six weeks after, having passed that time in apparent immunity from seizures, the attacks of grand mal appeared again, and during one month patient had more attacks than for any previous month.

We see in this case no permanent immunity or improvement after having had measles, but on the contrary the disease was made worse.

Case IV.—L. D., girl, fourteen years of age; epilepsy began at one year of age. The epilepsy was apparently of the idiopathic grand-mal type. The patient contracted measles April 22, 1900, the period of incubation being about fourteen days. She was exposed to Case I. at the same time as the other cases. The invasion began with cough and coryza and the temperature rose rapidly at the onset. The patient was weak and seemed to suffer severely from the disease. The eruption came out on the second day and spread quickly over the entire body, but was less pronounced in character than in other cases. On the fourth day the rash became more distinct, but it still was not well pronounced. The rash was irregular, reddish blotches, while the skin was cyanotic between the rash spots. The peripheral circulation was extremely poor from

the start; in fact, patient had been subject to areas of asphyxia and cyanosis in attacks (previously commented upon by French writers as accompanying certain forms of epileptic attacks). The skin was cold and clammy throughout the measles. The temperature began at 100.6° F. and increased to 105° F. on the third day, continuing high, with slight remission for a few hours at a time, until death on the sixth day. Respiration and pulse increased from the start; the pulse-rate was very feeble throughout and ranged to 160. Patient had suffered from pulmonary tuberculosis for some time and died of status epilepticus. The treatment was by isolation, confinement to bed, liquid diet, cardiac stimulation, morphine and potassium bromide during status, and hot baths. Patient died in status epilepticus April 27th, complicated by extended pneumonic consolidation from previous tuberculous process. Autopsy proved the tuberculous and pneumonic lesion and a congenital narrowing of the aortic orifice was found, to which the condition of peripheral cyanosis and asphyxia was attributed, as other writers have previously held.

On April 24th, two days after the onset of the measles, patient had one severe grand-mal convulsion at 3:00 P. M. On April 27th she had seven more severe attacks in rapid succession, which terminated in typical status epilepticus. She had had no epileptic attacks for an equal period prior to the onset of the measles. In this case it seemed that the condition of measles was directly provocative of status epilepticus. While we are aware that this is uncommon, Bourneville and Noir have reported similar cases.

Case V.—E. R., girl, seventeen years of age; epileptic attacks of idiopathic grand-mal type. The epilepsy began at one year of age. Patient contracted measles April 22, 1900. The period of incubation was about fourteen days. She was exposed to Case I. at the same time as the others. The invasion began with a slight cough and coryza. Fever and general symptoms of measles advanced daily in step-like manner. The eruption began on the first day with small red papules on the face, spreading over the entire body on the second day. They were blotchy, irregular and crescentric. The rash did not entirely disappear until the ninth day. The fever began with 102.6° F. at the onset of measles and increased to 103.6° in a few hours. There was a gradual decline to normal on the fifth day, ending by crisis. The pulse ranged from 85 to 100. Desquamation of fine scales, scarcely perceptible, occurred for one week after convalescence. Laryngitis existed as a complication, but there were no sequelæ. The treatment was by isolation, confinement to bed, liquid diet, sponging, enemata, diuretics, camphorated oil and vaseline. Recovery was complete in twelve days from the onset

For an equal period prior to the onset of the measles, patient had had twenty or thirty severe attacks each month. For an equal period thereafter, patient had one severe attack, but since then the attacks have been as frequent and severe as before. The lessened number of attacks lasted for two months only.

Cases of Erysipelas.

Case I.—M. H., girl, aged twenty-seven years, epilepsy of idiopathic grand-mal type; she had been epileptic since ten years of age. Patient had a severe attack of facial erysipelas from April 11 to 24, 1900, which was accompanied by mania. She had one petit-mal attack at the time of the erysipelas, two grand-mal attacks at an equal period just before the erysipelas, and six grand-mal attacks for an equal period thereafter. In this case the erysipelas seems to have provoked a severer form of epilepsy.

Case II.—J. R., man, aged forty-two years; idiopathic grand-mal type of epilepsy; he has been an epileptic since ten years of age. Patient had severe attack of facial erysipelas from May 7 to 16, 1900. There were not any epileptic attacks during the complication of erysipelas. He had but one attack for an equal period of time before and none for an equal period thereafter. Since this attack of erysipelas, and during the last two months especially, the epileptic convulsions are as before the infectious process. The problematical improvement, which might have been ascribed to the erysipelas, did not remain permanent.

Case III.—C. W., man, aged fifty-five years; his epilepsy began at forty-four years of age, caused by alcoholism. The convulsions are of grand-mal type. Patient had a mild attack of facial erysipelas from April 14 to 18, 1900. During this period patient had no epileptic convulsions, neither had he any attacks for an equal period before or after; but since this time attacks of epilepsy have occurred in their regular course as in the past few years.

Case IV.—J. W., man, aged forty-six years; his epilepsy began at eighteen years of age and is hereditary; it is grand-mal in type. Patient had severe facial erysipelas from April 14 to 25, 1900 which extended into the right arm and shoulder, during which time he was continuously delirious. There were no epileptic attacks during this interval and none occurred for an equal period prior to this time, while three occurred for an equal period thereafter.

Case V.—C. B., man, aged thirty-two years; his epilepsy is of the idiopathic grand-mal type; he has had epilepsy since sixteen years of age. Patient had a severe attack of facial erysipelas from April 19 to 26, 1900, during which time he had six grand-mal attacks and was constantly maniacal; for an equal period prior to this thirteen attacks occurred. For an equal period of time after the erysipelas, patient had three attacks. Soon thereafter attacks became more persistent and severe, and patient died from status epilepticus one month later.

Case VI.—M. C., woman, aged twenty-five

years; her epilepsy began at seventeen years of age, at which time the disease was supposed to have been provoked by an attack of erysipelas. Patient's attacks have always been infrequent, occurring once in four or five months. Facial erysipelas of a severe type occurred June 24, 1899, and lasted until July 26th, during which time no convulsions occurred and the course of the epilepsy did not appear modified. Since this time the patient has had cellulitis of the deep tissues of the neck, without modifying the course of the epilepsy.

Case VII.—A. B., man, aged thirty-seven years; he has had epileptic attacks since sixteen years of age; the epilepsy is of the idiopathic grand-mal type. Patient had severe facial erysipelas from March 7 to 14, 1900, during which time no epileptic attacks occurred. One grand-mal attack occurred for an equal period of time prior to this and two grand-mal attacks appeared within an equal period of time thereafter. Since then the attacks have occurred at regular periods, four or five times a month.

Two additional cases have come under our notice, details of which we have not at hand, but in neither was the epilepsy permanently benefited.

Our deductions from the study of these cases are that *in not one instance was the preexisting epilepsy favorably modified for any great length of time.* In a few cases the progress of the disease was accelerated by the infectious complication, and *in one the measles caused status epilepticus.* In those cases in which the epilepsy was favorably modified, the temporary improvement was slight and of very short duration. We are therefore forced to the conclusion that instead of the physician urging his patient to run the risk of an infectious disease, with the small chances of such an accident resulting favorably to the existing neurosis, he should urge them to avoid any and all such complications as far as possible.

MEDICAL PROGRESS.

Vaginal Hysterectomy.—G. Bouilly (*La Gynecologie*, Oct., 1900) reports a case of death after this operation due to peritonitis infected by loops of the intestine protruding through the wide-open vaginal vault into that canal. This accident led him to adopt the following modification: The last step of the operation is to draw the lips of the vaginal wound down and suture them together in the median line. Through the small openings on each side of this suture the vascular stumps with the clamps are gently everted. In this way the peritoneum is absolutely shut off from the vagina and its packing.

Ablations of the Trigeminal Ganglion.—Julius Dollinger (*Centralbl. f. Chir.*, Nov. 3, 1900) modifies the Krause-Hartley operation by planning the bone flap so as to avoid the lower front corner of the parietal bone and in it the anterior branch of the middle meningeal artery. Next he finds the main vessel within the cranial cavity and, working away from it forward and inward, finds the second and third offsets from the ganglion. Thus ligating or accidental division of the vessel is avoided and simplicity and brevity in operating attained.

Feeding in Typhoid Fever.—The effects of a more generous diet in the treatment of typhoid fever than is the usual practice to give are discussed by George W. Moorehouse (*Boston Med. and Surg. Jour.*, Nov. 15, 1900) in a study of a series of 150 cases of which he reports 117. The average time the patients were kept on a milk diet was ten days. As soon as the appetite began to return to any patient soft typhoid diet was at once ordered without direct reference to the temperature. The appetite and not the temperature was the guide to the continuance and increase of the diet once begun. The typhoid diets adopted by the writer are: (1) Milk diet, eight ounces every two hours, subject to special directions as to night feedings; (2) liquid typhoid diet, consisting of milk, milk with tea or coffee, albumin-water, beef-tea, malted milk, chicken-broth and barley-water, beef-juice and barley-water; broths, milk whey, junket, strained soups or gruels may also be given; (3) soft typhoid diet, to be added to the milk or liquid diet, (*a*) ice cream, well cooked (boiled) rice, broths thickened with it; (*b*) soft boiled or poached egg on soft toast, blanc-mange and milk puddings, calf's foot and other gelatin jellies; (*c*) gruels, crackers or bread softened in milk or broths, macaroni, finely-minced or scraped meats; the increase in diet to be very gradual, one addition only each day; (4) typhoid convalescent diet, to be added to anything above, the soft parts of oysters, a sweetbread, chop, cutlet, squab, game (small), chicken, fish, steak, rare roast beef; a mealy baked potato may also be given with any of the meats; (5) full typhoid diet, 6 A. M., milk; 8 A. M., a cereal with cream and a little sugar, milk with tea or coffee, egg on toast, bread or toast with butter; 10 A. M., bread and butter, with gruel or milk, or broth with egg; 11:30 A. M., soup, meat or fish (anything mentioned above), ice cream, blanc-mange, or milk pudding; 2 to 3 P. M., like 10 A. M.; 4 to 4:30 P. M., creamed chicken, or a bit of cold chicken or roast beef, bread, and milk flavored with tea or coffee; 6 P. M., cocoa, gruel or broth; at night, milk two to four times. Any change from a less to a more generous diet should always be gradual. The mortality in the 150 cases, thus fed, was 8.67 per cent. There were relapse-like rises of temperature in 30 of the 117 cases. In nine cases this relapse occurred before, and in 21 after, a more generous diet was begun. The writer believes this high proportion (18 per cent.) of relapses to be due to the fact that he has doubtless included among the cases of relapse many which would not be so classified by

others. The temperature charts show very clearly that the increased feeding does not interrupt the defervescence. The important features in these diet lists are (1) the articles permitted, and (2) the directions for the increase in diet, insuring the gradualness of any increase from a less to a more generous diet level. The new level was reached in the average case in about four or five days. Moorehouse says that patients fed generously begin to put on flesh at once, and show a continuous gain in strength and spirits as well as in flesh. He thinks that liberal feeding is a distinct advantage as regards prompt recovery of normal condition.

Iodine Used Hypodermatically in Pulmonary Tuberculosis.—After noting the fact that essentially the same tissues are affected by iodine as by the tubercle virus A. C. Croftan (*Jour. Am. Med. Assoc.*, Nov. 17, 1900) reports 27 cases of incipient pulmonary tuberculosis which he has treated by hypodermatic injections of iodine. Nineteen of these were cases of incipient tuberculosis with only circumscribed areas of infection, while in eight cases larger areas in one or both lungs were involved. A ten-per-cent. solution of iodipin was the iodine preparation used. Beginning with one drop of iodipin in one-half dram or so of sterilized oil, each day the dose of iodipin injected was increased by one drop until improvement was apparent. Much depended on the personal idiosyncrasy of the patient and the stage of the disease. There were never any bad effects of any sort from these injections of iodipin. More than sixty minims a day have not been injected. The results were uniformly beneficial. The appetite improved, the cough and night-sweats became less severe, and the patients gained in weight and improved in spirits. The physical signs were modified and seemed to show that the process was at least being held in abeyance and rendered latent. The writer does not consider the results obtained so far conclusive, as the number of cases is as yet small and they have not been observed sufficiently long, but he does think that the results warrant an optimistic view of the efficacy of this method of treatment.

Pseudopest Cases.—Dr. Arthur Mendonca (*Revista Medica de Sao Paulo*, Brazil, Sept. 15, 1900) presents some notes on certain cases of disease that were suspected to be pest during the recent epidemic and as such were isolated for a time. During the epidemic any patient suffering from adenitis was liable to suspicion as a case of the bubonic plague. Some of these cases prove rather difficult of differentiation. The bacteriological test was the final criterion. In a dozen of cases the buboes proved to be due to nothing more serious than staphylococcus aureus. One very suspicious case proved on direct examination to have no germs of any kind in the pus obtained from the swollen glands. Cultures on agar gave rise after twenty-four hours to colonies that looked very much like those of the typhoid bacillus. Under the microscope a bacillus was found that resembled the bacillus of pest. When followed through various culture media, however, the bacillus presented many characteristics very different to those of the pest bacillus and the conclusion was that the patient was not suffering from the much-dreaded disease. At the isolation hospital one very suspicious case occurred in an Arab. The direct examination of the pus from the inguinal swelling did not reveal the presence of any germs. In the cultures a pseudodiphtheritic bacillus was found in pure culture. This was taken to preclude the idea of pest. A bacillus very similar to that found in the case of the Arab was found in the pus from a supraclavicular lymphatic swelling in a woman under examination at the Hospital of the Strangers. It is evident that this bacillus would be the source of considerable difficulty in suspected pest cases. In a third case, in which no germ could be found on direct examination, the pest bacillus was found in the cultures, and along with it a sarcina. Whether this had any influence in producing a state of affairs in the serosanguinolent fluid of the bubo that concealed the presence of the pest bacillus is left open to conjecture.

Modern Quarantine.—The term "commerce destroyer" has been applied to coast quarantine with considerable justice, according to the belief of A. H. Doty (*Med. Rec.*, Nov. 3, 1900). The wholesale destruction of large cargoes from infected ports has been undoubtedly unnecessary in many instances. From his long experience as health officer of the port of New York, the author believes that the clothing actually worn by well persons is not a medium of infection, and he is equally certain that a ship's cargo seldom, if ever, is the cause of transmission of infectious disease from one port to another. He contends, however, that the mild or ambulant cases of infectious disease and convalescents from these diseases constitute a serious menace to public health and are chiefly responsible for the outbreaks which occur from time to time. It follows, therefore, that more attention is paid to the condition of passengers and a rigid inspection is made to determine whether any are affected. If the incubation period of the disease which is suspected has not elapsed, the ship is detained in Quarantine, and to avoid the possibility of the presence of mild or latent cases the clinical thermometer is made use of and found very reliable. At the end of the incubation period, although there may not be any symptoms present, a slight temperature is an almost constant sign, and any person reaching 100° F. is detained long enough to determine the cause of the rise. It is believed that the public is thus given the full protection and commerce is relieved of unnecessary delay and expense, a most important consideration.

Abdominal Suture.—In order to prevent ventral hernia through laparotomy cicatrices, such

as are the common experience of all surgeons, says Gottschalk (*Archiv f. Gynaekol.*, Bd. 61, Hft. 2), complicated methods have been proposed. The chief point to be observed is proper apposition of the various layers, each to each, throughout the wound. During the past six years he has satisfactorily made two rows of sutures only. The first takes in everything from the peritoneum to the aponeurosis of the external oblique, each inclusive, and the second secures the subcutaneous fascia and the skin. As the individual sutures of the deep series are tied the assistant apposes the layers. The skin stitches dip into the aponeurosis in order to prevent pockets. As to incisions, it seems to make no difference whether the central or lateral avenues are taken. The various cross incisions in the sheath of the rectus appear to favor hernia.

Incineration vs. Earth Sinks.—Since it is the history of all wars, with the exception of the Franco-Prussian war, that preventable diseases have caused more deaths than the bullet, the disinfection and disposal of the offal from camps becomes an exceedingly important subject for investigation. The use of zinc-lined troughs containing milk of lime has hitherto been generally accepted as the most convenient method, but it has been proven to be very ineffectual in preventing the spread of a contagious disease, especially typhoid fever. W. G. Bissell (*Med. Rec.*, Nov. 3, 1900) has been investigating the subject most thoroughly and experiments have been made during the last two New York State encampments. Incinerators have now been constructed by the State and found efficient by several regiments at the last encampment. There are eight incinerators placed on a suitably covered and ventilated wagon. Each incinerator is so constructed that the excrement is received into a pot beneath which is a fire-box, and the draught so arranged that all the odor from the pot is drawn down into the fire-box, the indol, skatol, etc., being thoroughly converted and oxidized and then allowed to escape by a chimney at the top. Besides being found very convenient, incineration is far more efficient for the final disposal of excrement, is less objectionable as regards labor, odor, etc., and with greater certainty eliminates the opportunities for camp pollution, rendering the spread of typhoid fever almost impossible. The recent Spanish-American war showed that in spite of the great advancement made in bacteriological methods, camp sanitation was markedly lax, and it is to be hoped that radical improvements will be at once made.

Alcohol in Pneumonia.—In discussing the diet in the acute stage of pneumonia, A. H. Smith (*International Med. Mag.*, Oct., 1900) says that it is now accepted that alcohol is a food as well as a stimulant, and as such it may be employed to replace in part, or to supplement, other diet in the acute stage of pneumonia. He thinks that it can be used with advantage much earlier in the disease than it is usually administered. Its distinctly antigermic property aids in inhibiting the local bacterial activity as is shown by much clinical evidence. Many cases have been reported which have been saved when *in extremis* by the use of 20 to 30 ounces of brandy or whiskey in twenty-four hours. The writer says that alcohol may be used tentatively at any stage of pneumonia, and that its action will be shown to be beneficial if the pulse becomes less frequent and of greater volume, and the respiration slower and deeper, twenty minutes after the dose is taken. The amount and frequency of the dose should be regulated by the duration of the improvement in the pulse and respiration. In drunkards alcoholic stimulation begins only when the amount given exceeds the habitual allowance in health. The excessive mortality of pneumonia in heavy drinkers is probably due to the fact that the depression caused by the disease has added to it the prostration caused by a withdrawal of the amount of alcohol which has become a necessity to their existence. Therefore, an alcoholic with pneumonia should get his full daily allowance of spirits, after which the amount of stimulation may be considered. A pneumonia patient should be allowed to drink all the water he desires. The diet, of such a nature that it will not readily ferment, should be restricted to an amount that can be easily digested and assimilated. Flatulence should be prevented by modifications in the quantity and quality of the food. If other forms of food are not properly digested and assimilated the substitution of a greater proportion of alcohol is indicated.

Sterilization of the Hands.—A very effectual means of treating the hands before operation is described by J. Hahn (*Centralbl. f. Chir.*, Oct. 6, 1900) as follows: In running sterile water at about 40° C. with common yellow soap and sterile nailbrushes, the hands and forearms are scrubbed hard and systematically in four sittings of a few minutes each. After the second scrubbing the nails are cleansed and trimmed. Next there comes for four minutes immersion in a one-to-one-thousand solution of bichlorid of mercury in ninety-five per cent. alcohol, followed by washing in a one-to-one-thousand or one-to two-thousand watery solution of the same, until the alcohol is washed off. Finally, after the gown is put on, a rapid rinsing in the alcoholic solution is done, which may be followed by a superficial drying with a sterile towel, or, better, the hand may be left moist and the operation begun.

Chronic Copper-Poisoning. — The enormous growth of copper industries in this country has made copper-poisoning a much more frequent and important condition for treatment. H. A. Kurth (*Med. Rec.*, Nov. 10, 1900) has met with a number of cases connected with the Edison Electric Works. The brass-workers are the men

usually affected, especially the finishers and polishers. The copper enters the system both by the alimentary and the respiratory tracts. This causes by its irritant action a marked bronchitis, frequently becoming purulent, the formation of connective tissue around the bronchi, and therefore an excellent nidus results for the deposition of streptococci, tubercle bacilli, etc. The symptoms of greatest value in the recognition of copper-poisoning are, (1) dyspepsia, which is the earliest of all symptoms; (2) anemia, which comes on before emaciation, loss of strength and the rather characteristic painful facial expression; (3) nervousness and irritability. The prognosis is good when organic changes have not occurred and a change of occupation can be effected. The important part of treatment is prophylaxis. Iodide of potassium is generally useless. There is no specific drug, but strychnine in large doses is valuable and phosphoric acid has been strongly advocated by some writers.

Clinical Aspects of Gout.—The variety of clinical pictures which gout and rheumatism may present is considered by Beverley Robinson (*Med. Rec.*, Nov. 10, 1900), who believes that they are the cause of various obscure conditions. He is convinced that no absolute dietary rules can be laid down in the treatment of these diseases. He believes that gouty manifestations may appear in the prostate, uterus, ovaries and rarely in the intestines, and recently has advanced the theory that many cases of appendicitis are of a gouty or rheumatic origin. The recurring cases of appendicitis, especially in adults, which are now operated upon during the interval, should first undergo a thorough antirheumatic preliminary treatment for a sufficient length of time to justify the operatory intervention. He acknowledges that these cases are very difficult to differentiate, but insists that by medical treatment the dangers of an operation may frequently be avoided.

Recurrent Laryngeal Paralysis.—J. F. Culp (*N. Y. Med. Jour.*, Nov. 3, 1900) reports a case of sudden paralysis in a healthy man of the left vocal cord while the patient was smoking and conversing with some friends. No signs could be found leading to the suspicion of any pressure upon the nerve and a diagnosis of probable neuritis of the recurrent laryngeal nerve was made. Tobacco was interdicted. The throat was sprayed frequently with benzoinal and menthol. Tincture of nux vomica (fifteen minims) was given three times per day and the constant current of electricity was applied to the side of the neck. The patient made a gradual recovery, and at the end of six months there was a complete restitution of the functions of the larynx.

A New Test-Meal.—The test-meal has become absolutely necessary in examining the stomach contents. The three meals chiefly employed are Ewald's, consisting of one to two rolls and two glasses of water; Riegel's, consisting of soup, a beefsteak and a roll; and Klemperer's, consisting of half a liter of milk and two rolls. Ewald's meal is withdrawn one hour, Riegel's three to four hours, and Klemperer's two hours after eating. A. E. Austin (*Boston Med. Surg. Jour.*, Nov. 8, 1900) finds two serious objections to all of these meals, as follows: (1) The indefiniteness of the amount of the food elements employed, nitrogen, fat and carbohydrate, and (2) that on account of the lack of fine division the tube introduced is frequently clogged, which necessitates its removal, its cleansing and reintroduction. The writer has made a number of experiments with a test-meal consisting of two grams of dried egg albumin compressed into half-gram tablets, and two glasses of water, the contents of the stomach being withdrawn one hour after eating. The amount of albumin in these tablets is equivalent to that found in the rolls, or crackers, of the Ewald meal, but is in a different and more soluble form. The advantages of this test-meal of albumin tablets are: (1) The contents never clog the tube; (2) there is always a definite amount taken; (3) the contents filter much more readily than when vegetable albumin is used; (4) a large mass of starch granules is avoided; (5) these tablets when once compressed can be kept indefinitely, are always on hand and can be given to the patient without his leaving the office; (6) furthermore, lactic acid when found is of vastly more diagnostic importance than after the Ewald meal, because in this case the acid must come from the remnants of the last meal, and hence point to a lack of motility. The writer cites in detail a number of cases in which this meal was used, and discusses the results obtained, showing the advantages of the albumin tablets over other test-meals.

Phimosis.—G. Marion (*Semaine Médicale*, Oct. 24, 1900) adds to the usual steps of this operation an elongation of the frenum. It consists of a transverse incision parallel with the corona, in length to correspond to the degree of lengthening desired. When sutured the incision is converted into a suture-line in the long axis of the organ, thereby gaining its own length at the frenum.

Salpingitis.—M. Mironov (*Semaine Médicale*, Oct. 24, 1900) says many of the dangers of the stumps of the Fallopian tubes may be avoided by anastomosing them with the vagina in the following manner: Through an incision in the anterior vault the base of the bladder is freed from the anterior face of the uterus, the vesico-uterine leaf of peritoneum is incised and its anterior flap sutured to the front margin of the vaginal wound, shutting out the bladder from much likelihood of damage. The uterus is then drawn down into the wound and the tubes ligated at each cornu. If the ovary is diseased, that adnexum is totally ablated. If the ovary is

sound, it is left by separating it from the tube. The incision must be sutured over and over with catgut, to avoid raw edges. Then the tube is removed and the stump drawn down to and sutured along the vaginal wound, hence securing drainage into that canal. The opposite side is treated in the same way. The cul-de-sac of Douglas needs to be opened only when adhesions are too extensive to be handled otherwise.

Tuberculous Phlebitis.—Lesné and Ravaut (*Semaine Médicale,* Oct. 10, 1900) conclude that certain tuberculous processes may have a secondary involvement of the veins, but there are cases where the bacillus of Koch lodges primarily in the endothelium and there sets up either a typical lesion or one closely analogous to ordinary phlebitis. They have performed numerous experiments and find they can recover the germ for the guinea-pig test very satisfactorily.

Perineal Floor.—The influence of a relaxed or ruptured perineum on the vagina, bladder and rectum is well known, states D. de Ott (*Semaine Médicale,* Oct. 10, 1900), but their effect on the static and functional conditions of the abdominal organs is too little appreciated. Recently he had a patient, forty-five years old, with a ruptured perineum, suffering from consequent prolapse of the rectum and various pronounced constitutional disturbances, as emaciation, insomnia, etc. In addition there was a small polypus, situated high up, cherry-size, and attached by a long, slender, though tough pedicle. Its characters would hardly account for the disturbance so well as the rupture of the perineal floor. Consequently a careful restoration of the floor was accomplished, followed at once by disappearance of all local and systemic symptoms.

Treatment of Constipation.—According to E. Roos (*Münch. med. Woch.,* Oct. 23, 1900) one factor constantly overlooked in the treatment of constipation is the part played by the normal intestinal flora, in producing free movements. Accordingly, the author obtained the coli bacillus from feces, grew it on agar and filled the culture in gelatin capsules which were covered with collodion and keratine, each capsule containing one platinum loopful of the pure culture. Five such doses were given to several patients during five days with the result that they were relieved from constipation for the following two weeks. Experiments with dead bacilli proved negative. The bacillus acidi lactici, employed in a similar manner, caused increased peristaltic action and flatulence, but hardly relieved constipation. The addition of sugar to the diet did not increase the action. The author then experimented with yeast which has already been successfully employed in scurvy and furunculosis. Half a gram two or three times daily in keratinized capsules produced no gastric disturbances or flatulence, but on the second day or later the desired cathartic action. Dried yeast exposed to heat seemed to have an even more beneficial action.

Diphtheria Bacilli in Healthy Throats.—From a study of the throat cultures of 285 healthy individuals, 7 of which showed the presence of diphtheria bacilli, and of 190 healthy boys whose throat cultures showed the presence of the Klebs-Löffler bacilli in only 16, Francis P. Denny (*Boston Med. and Surg. Jour.,* Nov. 22, 1900) has drawn the following conclusions: (1) Diphtheria bacilli are seldom found in the throats of those who have not been exposed to diphtheria. (2) The bacilli are more frequently found in those who have been exposed, especially in persons living under poor hygienic conditions or in institutions. (3) The conditions of institution life which favor the growth of the bacilli in healthy throats are the living together of a large number of persons in a limited air space. (4) Healthy individuals with virulent bacilli in their throats can spread the disease. They are just as dangerous as mild or convalescent cases of diphtheria, and ought, therefore, to be detected and isolated. (5) Cultures ought to be made among those who have been exposed to diphtheria; (*a*) by physicians among the members of a family who have been exposed; (*b*) by inspectors in the schools; (*c*) by the health officers under any circumstances when they think the disease is being or may be spread by such individuals.

Tabes and Diabetes.—So many symptoms are common to both tabes and diabetes that even with positive signs it may be doubtful for some time whether one is dealing with the transient glycosuria of the nervous disorder or with a diabetes in which the neurotic symptoms are most prominent. Yet, according to W. Croner (*Zeitschrift f. klin. Med.,* Vol. 41, Nos. 1-4) both diseases rarely occur together. Among symptoms characteristic of both may be mentioned irregular areas of anesthesia or analgesia, paresthesiæ, especially about the legs and sexual organs, increased sensitiveness toward cold, lancinating pains, diminished sexual vigor, and trophic and secretory disturbances, such as malum perforans pedis, decubitus, hyperidrosis and muscular atrophy. Even Westphal's sign may occur in diabetes, but is of no prognostic importance. In those few cases, however, where both diseases really occur together, it may reasonably be asked whether this is accidental or whether some common etiological factor exists. The rarity speaks for coincidence, yet diabetes and tabes have been seen in different members of the same family and diabetes has occurred after injury to the cord. Diabetes insipidus may occur with tabes and it is admitted that the former not so seldom develops into diabetes mellitus. Finally, syphilis is looked upon by many as being capable of producing both disorders.

Creosotal in Lobar Pneumonia.—C. F. Stokes reports seven cases in which early defervescence followed the administration of creosotal, gram 0.7 (mxij), in capsule every two hours.—*Brooklyn Medical Journal.*

THERAPEUTIC HINTS.

Chalazion.—Strzeminski (Wilna) states that chalazion can be cured in two to ten weeks by nightly applications of this ointment:

℞ Iodi puri..... 0.2 (gr. iij)
Potassii iodidi..... 0.6 (gr. vj)
Lanolini..... 4.0 (ʒ j)
Petrolati liquidi.....
Aquæ destillatæ.....aa. 80.0 (ʒ iiss)

Cough in Phthisis.—A very effective mixture is:

℞ Codeinæ ..... 0.015 (gr. ¼)
Creosot..... 0.3 (ℳ v)
Syr. ferri iodidi..... 1.0 (ℳ xv)
Ext. malt..... 8.0 (ʒ ij)
Aquæ q. s.....ad. 15.0 (ʒ ss)

Tapeworm.—Make an infusion with grams 30.0 (ʒ j) of pumpkin seeds chopped finely and grams 240.0 (ʒ viij) of water, and to it add the following:

℞ Granati rad. cort..... 15.0 (ʒ iv)
Pulv. ergotæ..... 2.0 (ʒ ss)
Acaciæ ..... 8.0 (ʒ ij)
Ol. tiglii..... gtt. ij
Oleores. filicis..... 4.0 (ʒ j)

Emulsify the last two ingredients by means of the acacia. This makes one dose and it should be preceded by from twelve to twenty-four hours' starvation. If the head is not obtained repeat the dose in three days.

Bronchopneumonia.—The oiled silk jacket should be worn throughout the attack, says L. E. Holt, and counterirritation maintained by the use of mustard paste. Hot flaxseed poultices may be employed occasionally. Alcoholic stimulants are indispensable in severe cases; 15.0 to 60.0 ccm. (ʒ ss-ij) daily of whiskey or brandy for an infant of one year. If this is refused sherry or Tokay wine may be taken. Stimulants are most needed when the temperature is low, or falls suddenly. Strychnine, gram 0.0002 (gr. 1/300) every three hours, is valuable, and for heart failure nitroglycerin, gram 0.00012 (gr. 1/500) every hour for several doses. Atropine, gram 0.00008 (gr. 1/800), caffeine, gram 0.003 (gr.1/20), or strychnine, gram 0.0002 (gr. 1/300), may sustain through sudden failure of respiration, but their effect is only temporary. Oxygen is a good respiratory stimulant. Antipyretic drugs, quinine, expectorants, and emetics should not be used. For a temperature of 105° F., or when extreme nervous symptoms exist, bathe infants in cold water with friction, and apply the cold pack to older children. Cold is contraindicated and a hot mustard bath preferable when there is general cyanosis, cold surface, feeble pulse, shallow respiration and stupor. Inhalations have a general beneficial influence, relieve cough, and promote bronchial secretion. They are used by means of the croup-kettle or vaporizer, the child being under a tent. At first simply water-vapor or lime-water is used for ten to fifteen minutes four to twelve times a day; later turpentine, terebene, eucalyptol, and, especially, creosote may be added. Restlessness, loss of sleep, etc., are controlled by cold or tepid sponging, or phenacetine in small doses; Dover's powder, gram 0.015 (gr. ¼), may be needed to relieve pain or incessant cough. For a sudden attack of general collapse put the child into a hot mustard bath, use strychnine and nitroglycerin hypodermically, and give oxygen continuously. —*Diseases of Infancy and Childhood.*

Emphysema.—A valuable formula in use at St. Luke's Hospital is:

℞ Morph. sulph..... 0.005 (gr. 1/12)
Potass. iodid..... 0.3 (gr. v)
Tinct. belladon..... 0.65 (ℳ x)
Spt. ætheris comp....
Syr. pruni virg...aa. 4.0 (ʒ j)
Aquæ q. s.....ad 15.0 (ʒ ss)

Dose: One tablespoonful four times a day. This is often dispensed without the morphine.

Acute Intestinal Catarrh.—It is sound practice, says J. M. Anders, to prescribe a mild cathartic (castor oil, calomel, or rhubarb, followed by a saline), and to combine gastric lavage with high intestinal irrigation to overcome the fermentative processes in the alimentary tract. To control the inflammation, give the following:

℞ Salol ..... 2.0 (ʒ ss)
Creosot..... 0.65 (ℳ x)
Bismuthi salicyl..... 4.0 (ʒ j)
M. et ft. caps. No. XX. Sig. One every three hours.

If there is much pain opium or phenacetine may be added. In many cases the intestinal secretions are decreased, and such may require this:

℞ Pancreatin ..... 4.0 (ʒ j)
Sodii bicarb..... 8.0 (ʒ ij)
M. Div. in chart. No. XII. Sig. One an hour after meals.

If these methods do not control the diarrhea in forty-eight hours, give bismuth in two-gram (gr. xxx) dose every three or four hours, or pills of

Plumbi acetat..... 0.13 (gr. ij)
Ext. opii..... 0.008 (gr. ⅛)

If the main lesion is in the colon, small enemas of starch-water, grams 60.0 (ʒ ij), with laudanum, grams 1.3-2.0 (ℳ xx-xxx), every four to six hours, are efficacious. For thirst chipped ice, carbonated waters and Apollinaris; for distressing flatulence alkaline carbonates, spirit of ammonia, and some carminative, and for excessive fermentation oil of cajuput are recommended.

Glycerin for Erysipelas.—Duvergey and Bernex report two cases of facial erysipelas cured in about eight days with a brusque fall in temperature. They also record two cures of gangrenous erysipelas. Glycerin solutions are applied on compresses, injected into any infected body cavities, and used as a wash. In these cases the pulse became good, the temperature fell, the pain disappeared, and the bacteriologi-

cal test showed diminished virulence of the germs, and finally their disappearance.—*Journal de Médecine de Bordeaux.*

Incontinence of Urine.—Summing up the observations in 156 cases treated by *Rhus aromatica,* Perlis, in his thesis, states that this drug is equal, if not superior, to all the usual methods of treatment. The fluid extract is given in doses of 15 to 60 drops three times a day. Its mode of action is unknown, but it causes no unpleasant symptoms and the toxic dose is large.—*Le Mois Thérapeutique.*

Bed Sores in Spinal Disease.—As long as the skin is unbroken, the following dressing is recommended by J. H. Lloyd:

℞ Ol. ricini.....
Collodion .....aa. 30.0 (℥i)

If the skin is broken add to this a little iodoform. When sloughs have formed treat as any other severe open wound.—*American Textbook of Applied Therapeutics.*

Bathing in Rickets.—Baths which may be used with advantage in rickets, writes James Stewart, are: (1) Simple water for cleanliness, not below 90° F. for children under six months, with gentle friction, especially of the extremities, after the child is removed from the bath and dried. (2) Medicated baths with rock-salt, sea-salt, or, if anemic, iron sulphate in solution, given warm once or twice weekly. (3) Sun-baths and sand-baths at the seaside.—*Amer. Text-Book of Applied Therapeutics.*

Itching in Jaundice.—Gilman Thompson advises sponging the body with sodium bicarbonate, grams 12.0 (℥iij) in hot water, grams 500.0 (Oj), or applying McCall Anderson's dusting-powder of

℞ Camphor ..... 6.0 (℥iss)
Zinc Sulph. .....15.0 (℥ss)
Starch .....30.0 (℥j)

Anointing with cacao-butter may be of service.—*Practical Medicine.*

Catarrhal Jaundice.—Dabney recommends the following:

℞ Acid nitro-hydrochlor. dil. 23.0 (℥vj)
Tinct. nucis vom. ..... 15.0 (℥iv)
Tinct. gentianæ, q. s. ad.. 120.0 (℥iv)

Dose.—One teaspoonful three times a day in a wineglassful of water. For the nausea calomel in small doses, effervescing citrate of magnesia, lemon juice, ipecac, gram 0.016 (gr. ¼) every half to one hour, or chloroform water.

℞ Bismuthi subnitr. .. 0.13 (gr. ij)
Cerii oxalat. ..... 0.65 (gr. x)
Cocainæ hydrochlor. 0.0065 (gr. 1/10)

given with cracked ice, is especially valuable.—*Amer. Text-Book of Applied Therapeutics.*

Early Pulmonary Tuberculosis.—H. Carageorgiadès employs the following remedies: (1) *Cacodylate of sodium,* gram 1 (gr. xv), in syrup, grams 300.0 (℥x). Dose, a teaspoonful in water before each meal, increased gradually to two teaspoonfuls. This amount causes no stomach disturbance and strikingly increases the appetite and the weight, but after ten days' use, it should be omitted for the same length of time. It is painless hypodermically, and one or two injections of one cc. (♏xv) of the following may be given daily:

℞ Sodii cacodylat. ..... 0.50 (gr. viij)
Aq. destillata ..... 10.0 (℥iiss)
Formol ..... gtt. i

(2) *Ichthyol,* gram 0.25 (gr. iv), and *aristol,* gram 0.06 (gr. i), in pill, four to ten a day, increased to sixteen, and then reduced to ten or twelve a day. Ichthyol is better borne than creosote, and can be used in large doses for a long time. Aristol, being a combination of thymol and iodine, is a valuable adjuvant, and acts better than iodoform, which is often prescribed. (3) Cantharidine, gram 0.0001 (1/650 gr.), dosimetric granules, two to six a day. The researches of Buchner, Richet, and others, show that cantharidine induces an exudate of serum around a tubercular lesion; therefore if the serum is impregnated with medicaments, these will come into direct contact with the tubercle tissue. For this reason the author considers cantharidine indispensable in the treatment. Rarely it causes vesical tenesmus, but usually is taken for long periods without untoward effects. These drugs with plenty of fresh air, and superalimentation, including in the diet 6 to 12 yolks of egg and 100 grams (℥iijss) of cod-liver oil a day, constitute a most successful plan of treatment.—*Journal de Médecine de Paris.*

Vomiting as a Therapeutic Measure.—In inducing vomiting, writes Mitchell Bruce, we are not effecting a simple mechanical act of evacuation, but may at any time be alarmed to find intense circulatory depression, faintness, and even threatening dissolution. Before administration the patient's general condition must be carefully, if quickly, ascertained. In most cases of acute poisoning the patient can bear the shock and sulphate of zinc, gram 1.3 (gr. xx), in water, grams 60.0 (℥ij), sulphate of copper, gram 0.12 to 0.3 (gr. ii-v), in water, grams 30.0 (℥i), or a tablespoonful of mustard in a cupful of hot water, should be given at once. Where the products of croup or bronchitis block the respiratory passages, vinum ipecac, gram 4.0 (℥i) for children, or grams 15.0 (℥ss) for adults, is the best emetic, because it is also an expectorant. Antimony is decidedly depressing in dose of gram 0.06 to gram 0.12 (gr. i-ij) of tartarated antimony, or grams 15.0 (℥ss) of the wine, for an adult. Carbonate of ammonium, being a stimulant to heart and respiration, is suitable in these cases. In acute dyspepsia the mildest emetics are indicated, as tepid water, salt and water, and warm nauseous infusions such as chamomile; these may be freely given. Apomorphine is at once the most certain and generally applicable emetic in a dose of gram 0.004 (gr. 1/16) subcutaneously, or gram 0.008 (gr. 1/8) by mouth. It is frequently necessary to follow an emetic by a stimulant, such as alcohol.—*Materia Medica and Therapeutics.*

The Medical News.

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OF MEDICAL SCIENCE.

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SATURDAY, DECEMBER 1, 1900.

TYPHOID FEVER IN NEW YORK CITY.

So much has been said in the recent daily press about the prevalence of typhoid fever in New York City and its possible connection with the water supply that physicians are interested in definite authentic information as to the actual state of affairs. The Medical News has had some special investigations made and this may be considered as the position of the Board of Health on the question:

More cases of typhoid fever have been reported in the city during the present autumn than during the same season of last year. The typhoid fever incidence in 1899 was, however, lower than usual, and the number of cases that have occurred since September 1st of the present year is not greater than those reported during the same period in 1898, which was an average year. The decrease noted last year was probably due to better sanitary conditions. For the increase this year certain adventitious circumstances must be taken into account. The regulations as to the report of cases of typhoid fever are much better observed now by the physicians of Greater New York than they were last year. Outside of Manhattan there was a tendency to neglect reporting cases of typhoid which is now disappearing. In addition the introduction of the Widal test for typhoid fever has encouraged the reporting of cases of typhoid by making the diagnosis more assured. A certain number of doubtful and abortive cases of typhoid would fail to be reported under the older diagnostic methods.

The increase of cases of typhoid fever in the city is more apparent than real. The Widal test has been applied so much more extensively during the past year that this factor alone would probably account for most of the apparent increase.

It has been said that certain parts of the city are suffering much more than usual from typhoid fever. Harlem was designated by one newspaper as especially singled out by the disease. The Board of Health statistics do not support the statement, however. The present epidemic of typhoid fever, if epidemic it is to be called, is the usual autumnal visitation of the disease which in our large cities seems to be due to the fact that returning visitors from the country bring with them the germs of the disease and occasionally from them other members of the household become infected.

With regard to the city water supply as a source of the typhoid fever, the Board of Health considers that there is not the slightest reason to suppose any connection between the drinking-water and the development of the disease. Every case of typhoid fever is investigated for the purpose of determining its possible source and nothing has led the investigators even to suspect any causal influence in the water. If the drinking-water were at fault in this matter there would be many more cases of typhoid reported than there are at present.

COMPARATIVE FREEZING-POINT OF URINES.

Cryoscopy is a method of urinary examination that has attracted considerable attention on the Continent during these last two years. At the recent International Medical Congress at Paris an animated discussion as to its clinical value was shared by Frenchmen, Germans, Italians and Hungarians. The principle underlying the new method is that the freezing-point of solutions varies according to the amount and molecular composition of the substances held in solution. Raoult's law is "The lowering of the freezing-point of a solution is proportionate to the number of molecules dissolved in the unit of volume of water, whatever may be the nature and weight of the molecules." This law is considered so

absolutely true that its application is relied upon not infrequently in pure chemistry to furnish data for the determination of the molecular weights of chemical elements or compounds, the density of which in the state of vapor cannot be directly obtained.

Korányi of Budapest first suggested the employment of freezing as a clinical means of obtaining information with regard to the number of molecules in solution in urine. This number, of course, can only be determined comparatively. Of two urines the one having the lower freezing-point will contain, according to Raoult's law, the more molecules in solution. This fact, however, does not absolutely decide that it is the better excretory product. The sodium chloride of the urine is not an excrementitious substance, but one that has passed through the animal organism unchanged. Its function is physical, not chemical. The cryoscopic value of two urines can only be compared when their chloride contents are equal or when due allowances have been made for the influence of the chloride molecules on the reduction of the freezing-point of their respective urines. Normally there exists a definite ratio between the number of chloride-of-sodium molecules in the urine and the number of molecules of other substances in solution. This varies for different bodily conditions. When the value of the chloride factor increases without a corresponding increase in the value of other dissolved substances, the significance of the urine as an excretory product grows less and the patient is in a dangerous condition.

Korányi has shown that in cardiac cases careful observation of the cryoscopic value of the ratio between the chlorides and other substances in the urine enables the observer to anticipate the occurrence of cardiac failure. In renal affections the application of cryoscopy is even simpler. No matter what the form of the nephritis, according to Winter, the freezing-point of the urine is never as low as normal. As it approaches the freezing-point of water the danger for the patient becomes greater and greater. The urinary freezing-point has been known to be higher than that of blood-serum. At such a time, of course, if certain ideas as to the value of osmosis in urinary excretion are to be accepted, the value of urine as an excretory product is practically *nil*. When the freezing-point of the urine falls the prognosis in nephritis is favorable. In anemic conditions the freezing-point of the urine is higher than normal and one of the first positive signs of a change for the better in the blood condition comes when the freezing-point of the urine falls.

Bouchard of Paris approaches the subject of cryoscopy from a different standpoint. The freezing-point of the urine shows the number of molecules in solution. The number of molecules of organic material contained in urine depends on the elaboration of the albumin molecule in the animal system. The molecular weight of albumin is 6000; that of urea, its ultimate derivative in the human system, is 60, that is to say, 100 times less. Each molecule of albumin represents a large number of smaller molecules in the urine. The better the metabolism the greater will be the number of molecules in the urine. The freezing-point depends upon the number of molecules present, so that it can be considered within certain limits a criterion of the perfection of metabolism. In this estimation the chloride contents of the urine must also be taken into account, since chloride of sodium undergoes no modification in the body and its elimination is not the result of metabolic processes.

These cryoscopic methods are as yet rather theoretical than practical, although their application in hospital wards is not difficult. Whether the information to be obtained from them will ultimately prove of more clinical value than that which can be gleaned from the determination of the specific gravity and the estimation of the nitrogen of the urine, remains to be seen. The very general interest taken in the subject by European medical men shows that high hopes have been raised. Our present methods of urinary examination are confessedly crude and elementary. Cryoscopy seems to promise to throw some light on the comparative conditions of blood and urine at a given moment, and on the mysteries of metabolism and its variations. Let us hope that the expectancy of the medical world will not be disappointed.

THE BLOOD IN TYPHOID FEVER.

Scarcely another subject in medicine has been developed with the same giant strides to greater perfection than the study of hematology within recent years. The enthusiasm of a scientific generation has already well carried the subject beyond the realm of academic interest alone; its realizations in the field of practice have been many and more are forthcoming. Any new contribution to our knowledge of the blood is then especially

welcome at this time when medicine tends more and more to refinements of diagnostic methods. Perhaps no more interesting results of a study of the blood in typhoid fever have ever appeared than those recently made known by Dr. William Sydney Thayer (*Jour. of the Boston Society of Medical Sciences,* Oct. 16, 1900). This paper is based on an analysis of the examinations of the blood in the disease made in the Johns Hopkins Hospital during the last eleven years.

With regard to the quantitative and qualitative changes of the red blood-corpuscles practically nothing has been added to what was not already known by those engaged in this sort of work. As is well recognized during the first two weeks there are no considerable changes, apart from certain transient elevations in the count due to concentration of the blood brought about by diarrhea or sweating. Cabot states that baths have a similar effect. Contrary to the opinion of Hayem, who has always taught that the diminution begins rather suddenly in the middle or end of the third week of severe cases, Thayer finds, as does also Cabot, that the diminution in the number of the red cells becomes evident shortly after the onset of the typhoid fever and increases gradually throughout the course of the disease. Then anemia evidently bears a close relation to the severity of the disease; the average loss rarely exceeds 1,000,000 to the cubic millimeter. The loss of coloring matter in a general way parallels that of the reds.

The greatest value of the studies is really centered in the results of the white-cell counts under various conditions. All observers agree with Thayer's results showing a progressive diminution of the polymorphonuclear neutrophiles with a corresponding augmentation in the mononuclear forms. The limits of variation in the percentage of the polymorphonuclear neutrophiles is considerable; figures below 50 per cent. are not uncommon. These observations for the most part agree with those of Hayem, Khetagurow and Cabot. Among the lymphocytes the increase is not, as a rule, in the cells conforming to the type description, but in small forms with palely-staining nuclei, and a relatively large amount of transparent or nearly transparent protoplasm.

In cases with persistent fever there may be a tendency in the latter weeks of the disease toward a slight elevation of the leucocyte count, as compared with that at the height of the infection. However, unlike Aporti and Radaeli, the Johns Hopkins Hospital estimations show no tendency to a rise of the leucocyte count at the beginning of convalescence.

An increase to above 10,000 white cells to the cubic millimeter in typhoid fever is usually an indication of some foreign influence, such as cold baths, inflammatory complications, hemorrhages, etc. The transient leucocytosis which occurs after cold baths is very interesting; the increase may amount to three or four times the number before the bath. In this leucocytosis the relative proportions of the different varieties of colorless elements are unaffected.

Recognition of the fact that in uncomplicated cases of typhoid fever there is usually a condition of leucopenia is of the greatest importance, as will shortly be seen. Inflammatory complications, hemorrhage and perforation of the bowel are accompanied by a polymorphonuclear leucocytosis, the extent of which depends, apparently, more upon the nature of the local lesion than upon the species of micro-organism which may be the exciting factor. Cabot is, however, of the impression that when the cystitis or pneumonia is induced by Eberth's bacillus one is less likely to find a leucocytic increase. Leucocytosis is especially noticeable in connection with large abscesses, phlebitis, peritonitis, pleurisy, pneumonia, periostitis, cystitis and cholecystitis. It is worth remarking that the latter is doubtful. In some cases in which the complication is associated with a particularly malignant infection, Thayer rightly points out that the count of the leucocytes may not only fail to show an increase, but may even reveal a tendency toward a diminution in number, especially if the patient be already in a state of prostration. When hemorrhage from the bowel or perforation of the bowel occurs the count rapidly reaches above 10,000, although this is not invariable. The absence or disappearance of a leucocytosis following a perforation is an indication of the malignity of the infection or the prostration of the patient. The surgical features and indications of the leucocytosis in typhoid fever have already been the subject of discussion in these columns (*vide* Medical News, Oct. 20, 1900).

There are few diseases beyond the "diseases of the blood" in which hematological examinations may bring forward the same valuable information, not only with respect to the diagnosis of the typhoid fever itself, but about its complications, conditions in which the outcome of the treatment must often be measured by the time of making the diagnosis. Attention to the side

of blood diagnosis cannot be too strongly urged; all who become proficient in this will ever reap the richest reward.

ECHOES AND NEWS.

NEW YORK.

Much Scarlet Fever in Erie County.—Health Commissioner Wende of Buffalo reports an epidemic of scarlet fever at Williamsville. Thirty cases of the disease have been reported, and there are supposed to be several others.

Smallpox on the Upper West Side.—Last Tuesday six cases of children having smallpox were brought to the notice of the Health Department and all of them from the upper West Side. Four patients are colored, living in West Sixty-ninth Street, and the last in an apartment house in West Seventy-sixth Street.

Obituary.—Dr. Frederick Cornell De Mund died at his home, in Bensonhurst, on Tuesday last, in his seventy-first year. He was a graduate of Rutgers College in 1852 and of the College of Physicians and Surgeons of New York in 1855. He retired in 1895. He was at one time a School Commissioner in Kings County and Health Officer of New Utrecht. He leaves a widow, a son and a daughter.

Gift to Woman's Hospital.—At the forty-fifth annual meeting of the Woman's Hospital in the State of New York, which was held at the home of Mrs. Robert W. De Forest at 7 Washington Square, on Thursday, November 22d, President John E. Parsons announced that Mrs. Frederick F. Thompson, who recently resigned the office of treasurer, had offered to build a nurses' home in connection with the hospital, the home to cost between $100,000 and $150,000. The home will be built on the hospital grounds, which takes in the square block bounded by Forty-ninth and Fiftieth Streets and Park and Lexington Avenues. The latest gift of Mrs. Thompson is in addition to another of $55,000 which she made in the early part of the year.

Supremacy of the Law.—Michele Accette, physician, attended professionally Teresa Zupa of Brooklyn, and furnished her medicine, all to the value of $100; and she, in return, is showing the doctor why, in the interest of public health and sound law, he is not entitled to be paid (Accette vs. Zupa, 54 App. Div. 33). When he sued her for the amount, she set up that he was not "duly qualified, registered, and authorized to practise medicine as a physician in the County of Kings." The doctor proved that he was admitted to practice, and graduated from the University of Naples, had passed the examination of the University of the State of New York, had been licensed by the Regents of the University in 1896, and had practised since that time. This, the Doctor thought, was enough. The trial court thought so too. For when, in the course of the trial, the defendant offered to prove that the Doctor was not a registered or licensed physician in Kings County, the judge refused to admit the evidence, saying, "It makes no difference as to his being registered or not. The registry of physicians is only a police measure, and does not affect a physician who is really practising; an admitted physician may practise his profession; registry is only a supervision by the police." But it happens that the Public-Health Law (Laws of 1893, chapter 661, sections 140 and 149) declares that no person shall practise medicine "unless previously registered and legally authorized, or unless licensed by the law regents," that the license shall be registered in a book in the County Clerk's office, and that the violation of these provisions is a misdemeanor. Accordingly, the Brooklyn Appellate Division of the Supreme Court set aside the judgment obtained by the Doctor, on the ground that "it is a settled principle that one cannot receive compensation for doing an act which is forbidden by law and is a misdemeanor. The contrary rule would make an absurdity. It would permit one to hire another to commit a misdemeanor, and would compel the payment of the contract price for doing what the law forbids."—*Evening Post.*

PHILADELPHIA.

Protective Union of Doctors.—Physicians in Lackawanna County, Pa., following the example of their brethren in Detroit, are trying to organize a union for mutual protection. They wish to circumvent dead-beats. To compel the expert delinquents to settle up is one of the purposes of organization. Another prominent purpose will be the suppression of quackery. Lay obstetricians who do not fully comply with the requirements of the law will be an especial target for the attacks of the doctors' union. Osteopaths, who are not recognized by the law in Pennsylvania, and who, it is claimed, subject themselves to arrest if they take a fee for their service, will be closely watched. Christian Scientists, Dowieites, and all others who practise faith curing will also be objects of particular solicitude.

Dentists at the Philadelphia Hospital.—The directors of the Department of Charities and Correction of the City of Philadelphia have established at the Philadelphia Hospital a dental visiting staff consisting of four dental surgeons. The members of the staff elected are M. H. Cryer, M.D., D.D.S., University of Pennsylvania, Robert H. Nones, D.D.S., Medico-Chirurgical College, Thomas C. Stellwagon, Jr., D.D.S., Philadelphia Dental College, I. N. Bromell, D.D.S., Pennsylvania College of Dental Surgery. They become members of the Medical Board and will act in conjunction with them. This is the first general hospital to adopt the plan of having a dental staff. It is to be hoped that this example will be widely followed, for among the multitude

of patients who demand treatment from the general hospitals many are sufferers of disturbances that belong rather to the province of the dentist and oral surgeon than to that of the general surgeon.

University of Pennsylvania Medical Society.—The officers recently elected for the ensuing year are: President, Dr. John H. Musser; Vice-Presidents, Drs. W. G. Spiller and Alfred Stengel; Secretary, Dr. A. O. J. Kelly.

High-Priced Milk from Diseased Cows.—A herd of 95 cattle at the Reedhurst stock-farm near Erie has been condemned by State Inspector Irons. The animals are suffering from tuberculosis and will be killed at once. Milk from this herd has been commanding a price higher than the average because of its supposed excellence.

Bequest to Charities.—The will of Eben C. Jayne, a member of the firm of Dr. D. Jayne & Son, patent medicine manufacturers, who died a week ago, bequeaths legacies amounting to $7500 to local charitable institutions.

State Hospitals for Consumptives and Epileptics.—The State Board of Charities, at a recent meeting in Pittsburg, considered the advisability of State institutions for the care of consumptives and epileptics. All the members individually favor the project which may result in a recommendation being made to the next legislature for the establishment of such hospitals.

Typhoid Epidemic Abating.—The epidemic of typhoid fever at Cementon is abating since sanitary precautions have been instituted and all milk and drinking-water boiled before they are used. There are still 150 people ill with the disease. A press cause is said to have been a dead horse which has been discovered in the reservoir in an advanced stage of decomposition. The next move is to discover who is responsible for such an occurrence.

Skylight Falls in Hospital.—A lucky accident, in point of time, occurred at the Jefferson Hospital during the night of November 24th. A section of the sloping skylight over the operating-room fell and carried with it a large pane of a horizontal window beneath it, both falling forty feet into the amphitheater below. Some of the globes on the chandelier were broken and three tables, one, the operating-table, being badly damaged. Had the accident occurred during a clinic the persons in the arena as well as a number of students would have been seriously and probably fatally injured.

Obituary.—Dr. A. L. A. Toboldt died November 22d of uremia. Dr. Toboldt was born in Germany in 1860, coming to Philadelphia in infancy and graduating from the University of Pennsylvania in 1880. Several years later he was appointed professor of Materia Medica at the University, which position he held until four years ago, when he resigned in order to devote his entire time to private practice. He was the author of numerous journal articles.

Benefited by Christian Science.—The Coroner's inquest upon the body of Henry Mohn, who died last week of tuberculosis, revealed the fact that Mohn had had no medical treatment since June last. Since that time he had been under the care of Christian Scientists. His mother testified that their Bible readings, etc., had been of service and improved his condition because it lessened the pain and made him more comfortable. She further stated that the scientists made no charge for their treatment.

Political Pull vs. Merit.—Acting Chief Druggist England of the Almshouse has resigned his position. His letter to the Department of Charities and Correction is decidedly to the point. He says in part, "Apparently preeminent merit is 'not in it' with preeminent political 'pull' even in the selection of a man to compound drugs and medicines for the city's poor, sick and dying." England has been first assistant druggist at the Almshouse for seven years and for the past eight months acting chief druggist. He is said to have passed number one in the civil service examination against thirteen contestants for the place and to have had the recommendation of the Superintendent. It appears that another man was chosen because of political backing.

Philadelphia as a Greater Medical Center.—Superintendent Geary, at a recent meeting of a Committee of Councils at the Almshouse, suggested radical changes which would not only benefit the sick poor of this city, but would also increase its facilities as a great medical center. He advocates the removal of the pauper and chronic insane inmates to buildings which would be erected near the present House of Correction. This would make the institution what it was intended to be and should be, the Philadelphia Hospital. It could then be made the head of the Bureau of Charities where all cases could be admitted, examined, and sent to their proper places. This would make it a great medical center where many students could finish their education instead of going abroad for that purpose. To further this end the Municipal Hospital could be removed and added to the equipment, as the site of the Almshouse is an isolated one and admirably fitted for the handling of contagious diseases. This would also remove the objections of citizens to the placing of such a hospital. A hospital-boat to ply between the hospital and the Holmesburg institutions to distribute the cases needing removal would complete this arrangement.

Parasitic Hemoptysis.—Dr. Charles Wardell Stiles of the Bureau of Animal Industry, Washington, D. C., was the guest of the Pathological Society November 22d and read a very complete and instructive paper on the above subject. The exciting cause of this condition, the parasite

known as *paragonimus westermanii,* was minutely described as to its structure and development and microscopic specimens exhibited. No case of this infection has as yet been discovered in man in this country, but from 50 to 100 cases in hogs have been found and investigated by the Bureau, and it also occurs in other animals. The disease is very likely to be confounded with pulmonary tuberculosis. It is rendered of especial interest at the present time when United States troops are returning from the East. Being an Asiatic disease, occurring in man in China and Japan, the possibilities of its being brought by the soldiers are very great. The parasite passes through a certain species of snail as intermediate host in its development. While it is not certain that the species of snail which fosters the parasite in Asia is present in this country, it is known that the genus is found here. The disease is therefore not contagious, but is indirectly infectious. It is probably contracted from snails or from drinking-water. The pathology of the disease is not as yet well worked out, but it is known that both the parasite and its eggs may be carried to the brain. The diagnosis is made by examination of the sputum, which contains the characteristic eggs. Prevention consists in caring for the sputum and in destroying infected cats and dogs. The Government allows the meat from animals the lungs of which contain the parasite to go upon the market, the lungs being consigned to fertilizer plants. Treatment of the disease thus far is absolutely hopeless.

In response to a suggestion by Dr. Beates that the Society take some action regarding the placing of medical zoology in the curriculum of medical schools, Dr. Stiles outlined a course which he believes should be instituted in every medical college and taught by a medical zoologist. At present only three institutions in this country have such a course, *viz.,* Johns Hopkins, the Army and Navy School at Washington, and Georgetown University.

CHICAGO.

Cadaver Stealing at the County Hospital.—A well-developed plot for the obtaining of cadavers from the Cook County Hospital was nipped in the bud last week by the arrest of the principal.

College of Physicians and Surgeons.—Dr. William E. Quine, Dean of the College of Physicians and Surgeons of Chicago, has given $25,000 to the college to endow its library; and Dr. D. A. K. Steele, another member of the faculty, has given a like amount to endow the pathological laboratory.

Election Bet to Hospital in Danger.—George H. Laflin of Chicago, whose gift of $5000 to a hospital in New York in the event of McKinley's election was announced in a dispatch from the East, is ill at his home from the effects of a street-car accident.

To Teach Military Surgery.—Dr. Nicholas Senn has been engaged by the University of Chicago to give a series of lectures at the university upon "Military Surgery." These lectures will begin next fall, when the first-year students at Rush Medical College will study at the university instead of at the West Side College. This move has been decided upon since the Rush Medical College became affiliated with the university. A number of medical students are now taking studies at the university, and next fall there will be several hundred there.

Municipal Lodging-House.—The Commissioner of Health announces that his forthcoming estimates will contain an item of $20,000 for a municipal lodging-house, to be established in some rented building and to contain perhaps 300 beds. Such an institution might be designed, after the example of British cities, to serve the purpose of the ordinary common lodging-house which is run for profit, but evidently the proposal contemplates one which shall be of that specialized sort designed to serve as an agency in dealing with the question of vagrancy. There is to be a medical sanitary inspector included in the staff and other officers with salaries to look after the health conditions of the enterprise.

Report on Health in Chicago.—According to the statement of mortality for the week ended November 17th, the excess of deaths of males over females was 55 per cent. and of those over sixty years of age was 40 per cent. greater than during the previous week. This is attributed to the excitement in the closing days of the Presidential campaign and to exposure on election night—the principal causes of death being bronchitis and pneumonia at all ages, and Bright's disease, heart-disease, and nervous diseases among the old. Notwithstanding this excess, the November mortality-rate continues to be low.

Anti-Noise Ordinance Killed.—One of the acts of the Council last Monday was to kill the proposed ordinance for suppressing needless noises in Chicago. The measure was treated by the "gang" as a huge joke, and its discussion was carried on to an accompaniment of pounding, shouting, and general uproar. It was scarcely to be expected that the ordinance would be passed, or that it would be enforced if passed, but the spirit in which it was howled down is no credit to a deliberative body making pretensions to dignity. The facetious amendments and noisy demonstrations of the Aldermen opposed to the measure were not so funny as they seem to have imagined.

Obituary.—Dr. Romaine J. Curtiss died at his residence in Joliet, Ill., November 20th, after a short illness. He was a friend of the late Dr. Keeley and assisted him in the work of making his cure for drunkenness. Dr. Curtiss was born in Richland County, O., October 1, 1840. In 1862 he entered the Union army as hospital

steward of the One Hundred and Twenty-third Ohio Volunteers and in April, 1863, he was appointed a medical cadet in the regular army. He was appointed assistant surgeon in the navy, serving till the close of the war. He then located in Erie County, N. Y., where he practised medicine for seven years. He came to Joliet from Erie County in 1873 and resided there from that time.

Chicago a Dumping-Ground for Dependents.—The Chicago Bureau of Charities says in its last annual report that this city has become the "dumping-ground" for the chronically dependent people of surrounding counties and States, who are shipped here to relieve the persons or communities whose duty it is to take care of them of the burden of their maintenance. The board says that the city and county authorities will not undertake the duty of sending these dependents back where they belong, and that private charitable organizations have attended to the matter in many instances. The report of the bureau does not tell what excuse the local authorities make for their failure to perform their duties. Possibly they do not attempt to make an excuse. As this city has become a harbor for tramps and criminals, so has it become one for those who are obliged to live on charity or who prefer to live in that way. Dependents are sent here, or come here of their own accord, to become a burden on the public or private benevolence of this city. The down-town streets swarm with beggars whom the police allow to ply their trade. The charitable organizations, secular and religious, are deluged with applications for aid, and much money goes to the unworthy at the expense of the worthy. The practice of making Chicago a dumping-ground for outside dependents is one which imposes a heavy tax on the people of this city.

Gift to Wesley Hospital.—The building fund of Wesley Hospital is $25,000 richer on account of the subscription of Thomas Kent. The hospital is being built by Northwestern University as a cooperative institution to the medical college at Dearborn and Twenty-fifth Streets. The gift of Mr. Kent was announced last week, although it is said that he made the donation some time ago. Wesley Hospital, when completed, will cost in the neighborhood of $250,000 and will accommodate 300 patients. The main part of the building is now being erected and a small wing on the south will be built later. The cost of the main part will be $200,000 and the subscriptions which have been received so far go to make up this amount. The main building will accommodate 250 patients. Secretary Burch has collected nearly all that is needed for the completion of this part of the building. Out of the $200,000 required only $15,000 or $20,000 is lacking.

Mental Hydrophobia.—The daily press announces the death of a J. R. Beart of this city, who was bitten by a dog last August. The dog did not have hydrophobia, but last week the patient developed a marked case of hysterical hydrophobia resulting in death.

Chicago Churches Unhealthy.—The churches in Chicago, according to Chief Sanitary Inspector Young, especially the Protestant churches, with a slight exception in favor of the Episcopalian, are locked up all the time, with brief intervals for services. The result is that they are never properly ventilated, and the air becomes surcharged with germs worse than exist in any theater or worldly place. It is simply the result of the officers of the churches not properly understanding the requirements of sanitation, and how necessary it is to regard seemingly trivial things in securing a good result.

GENERAL.

Psychologists Duped.—Members of the faculties of several leading universities and colleges, eminent in psychology, philosophy and medicine, and who have attained distinction in the study of hypnotism, are indignant over the use made by the "American College of Sciences" of several articles prepared by them to be published in book form.

Oldest Physician.—According to the *Medical Press*, Dr. G. Ritter von Hochberger of Carlsbad is the oldest medical practitioner in the world. He is now ninety-seven years of age and is practising in a quiet way.

First Woman Physician in Hungary.—Charlotte Steinberger has just had conferred upon her the degree of doctor of medicine by the University of Budapest.

St. Louis Medical Society.—At the last regular meeting of this society, held November 24th, Dr. G. Wiley Broome showed two patients illustrating the transformation of senile warts into epithelioma, and Dr. H. J. Scherk read a paper on "Gonorrhea; Its Treatment from the Present Standpoint."

More Physicians for the Czar.—Three additional physicians have been summoned to Livadia from St. Petersburg to attend the Czar, the night staff there at present having proved insufficient.

Plague in Rio Janeiro.—Five hundred cases of plague have occurred in this city between April 18 and December 1, 1900.

Yellow Fever in Mississippi.—The latest reports from Brookhaven and Natchez show that no new cases have developed. The reports from Brookhaven seem to indicate that the disease has been prevalent there since September 1st.

Yellow Fever on the Texas Border.—This disease is now present 15 miles from the Texas border, in the Republic of Mexico.

Bubonic Plague in Africa.—In connection with the bubonic plague, Sir Alfred Milner, the British High Commissioner, has proclaimed that all the east coast ports of South Africa, between the tenth and fortieth parallels, are infected.

Smallpox in West Virginia.—The State health authorities have adopted more vigorous measures of quarantine at Smithfield, a small town composed principally of negroes engaged on the new Short Line Railway, 200 of whom have smallpox. Force of arms will be resorted to, if necessary.

Diphtheria and Measles in Indiana.—There are 1000 cases of diphtheria and measles in Muncie and physicians are powerless to stamp out the contagion. One-fifth of the school children are afflicted and the schools are depopulated, many having been closed.

University of Texas Medical Department.—The Medical Department of the University of Texas, Galveston, opened November 15th with an attendance almost as large as that of previous years. The date of opening was six weeks later than usual this year, therefore the session will continue until June 30, 1901. Considerable damage was done to the college building and the Sealy Hospital by the storm of September 8th, but both have been repaired. Fortunately the laboratories were not seriously damaged and the instruction will go on as usual.

Too Many Women in Medicine.—In a recent address to the students attending his courses in gynecology, Prof. Friedrich Schanta of Vienna expressed the opinion that law and other professions should be thrown open to women, because at present too many of them crowd into medicine, for which few were fitted. Of every hundred female medical students, he said, only thirty-three become physicians, the others being incapacitated by the horrors of the dissecting-room and other impediments.

Insane Man Must Pay Board.—County Judge Gower of Kankakee, Ill., decided that Luc Dandurand, insane, must pay $520 for his sustenance at the Kankakee County Poorhouse during the last five years. The decision is important, for the case is the first of its kind tried, and it will mean a saving to the counties throughout the State of many thousands of dollars. Dandurand is seventy years old, and has been insane since 1883. Seven years ago he was transferred from the eastern insane hospital to the poorhouse in accordance with the regulation that returns to the various counties all patients in excess of a certain quota. Learning recently that Dandurand had $2500 worth of property the county began suit to collect pay for his maintenance at the poor farm at the rate of $2 a week for the seven years he had been an inmate of the institution. The case was fought by Dandurand's conservator, who contended the patient was still insane, and to all practical purposes an inmate of the State hospital, and, therefore, the county could not legally charge for his sustenance.

Arsenic in Beer.—Manchester, England, is suffering from one of the most extraordinary epidemics known, which is nothing more nor less than an epidemic of arsenical poisoning and at least a hundred cases are reported. The peculiarity of the epidemic is that it has been evident only among beer-drinkers. People who have taken merely a glass at each meal have complained, though they did not connect the malady with the beverage. Since late in the summer doctors have everywhere been treating an ever-growing proportion of their patients for peripheral neuritis, which they believe due to too much alcoholic drink. In the hospital of the Chorlton Board of Guardians one ward is practically full of victims of poisoned beer. All over the Union the relieving officers have aided similar cases.

Asylum Regulations in Iowa.—Under authority conferred by the Iowa Legislature, the Board of Control in that State, which has done exceptionally good work in the management of State institutions, has promulgated rules for the government of private and county asylums for the insane. For legal reasons all these asylums had to be included in the supervision, but the abuses to be corrected are found in the county institutions. There are fifty of these latter, and they have been established as a measure of economy, the county authorities having learned that they could care for the incurable insane at a less expenditure than the amount they were required to pay to the State asylums. The economy resulted largely in stinting the number of attendants to care for the insane, in housing patients in poor quarters, and in feeding them on the products of the almshouse farm, raised by pauper labor. Hereafter there must be a proper number of attendants, not paupers, to be determined by the number to be cared for; the patients must have well-ventilated apartments, be fed three times a day, and have regular medical attendance and physical exercise, as also amusements; they must not be punished for violations of the rules; must have frequent baths and change of clothing, and the sexes must be separated.

Pan-American Medical Congress.—The triennial session of this Congress is to be held, as already announced, in Havana, Cuba, December 26, 27, 28 and 29, 1900. The secretaries of the different sections are as follows: Internal Medicine, Dr. Judson Daland, 317 S. 18th Street, Philadelphia; Surgery, Dr. W. C. Nicholson, Prudential Building, Atlanta, Ga.; Gynecology and Abdominal Surgery, Dr. H. P. Newman, 103 State Street, Chicago, Ill.; Obstetrics, Dr. E. Gustave Zinke, 13 Garfield Place, Cincinnati, O.; Therapeutics, Dr. Hobart Amory Hare, 222 S. 15th Street, Philadelphia; Anatomy, Dr. Arthur Bevan, 100 State Street, Chicago, Ill.; Orthopedic Surgery, Dr. John Ridlon, 103 State Street, Chicago, Ill.; Railway Surgery, Dr. Duncan Eve, 700 Church Street, Nashville, Tenn.; Pediatrics, Dr. I. N. Love, 40 West 44th Street, New York; Mental and Nervous Diseases, Dr. Charles H. Hughes, 3857 Olive Street, St. Louis, Mo.; Dental and Oral Surgery, Eu-

gene S. Talbot, 103 State Street, Chicago, Ill.; Ophthalmology, Dr. John E. Weeks, 40 East 57th Street, New York; Laryngology and Rhinology, Dr. G. Hudson Makuen, 1419 Walnut Street, Philadelphia; Otology, James T. McKernon, 62 West 52d Street, New York; Physiology, Dr. James P. Brubaker, 135 North 34th Street, Philadelphia; Pathology, Dr. Hunter McAlpin, 9 East 56th Street, New York; Dermatology and Syphilology, Dr. A. Ravogli, 5 Garfield Place, Cincinnati, O.; Medical Pedagogy, Dr. Otis K. Newell, 14 Central Park West, New York; Medical Jurisprudence, Dr. H. A. West, 2127 Market Street, Galveston, Texas; General Hygiene and Demography, Dr. Alvah Doty, Quarantine Station, New York; Military Medicine and Hygiene, Major Jefferson Kean, Surgeon United States Army, Quemazos, Cuba; Marine Hygiene and Quarantine, Dr. R. M. Woodward, Surgeon Marine-Hospital Service, Washington, D. C.

Information with regard to the Congress will be furnished by any of these secretaries, or by the Secretary-General of the Congress, Dr. Tomas V. Coronado, 105 Prado, Havana, Cuba, or from the American Assistant Secretary-General, Dr. Ramon Guiteras, 63 West 54th Street, New York.

Any American physician who is a member in good standing of a recognized medical society may become a delegate to the Congress by applying to the president or secretary of the society to which he belongs. Any physician in good standing in the profession may become a member by sending in his application to the secretary. Those desirous of reading papers before the Congress should send announcements to that effect to the Secretary-General in Cuba, or to his assistant in this country, or to the secretary of the section before which the paper is to be presented.

Extensive preparations have been made in Cuba for the social entertainment of the medical visitors during their stay in the Cuban capital. A number of excursions to interesting points in the neighborhood of Havana have been planned and a series of tours are to be arranged that will combine pleasure and information with regard to the possibilities of Cuba as a winter resort and will besides furnish reliable data as to the developmental resources of the country. The weather at Christmas-time in Havana is always delightful and the sea trip a source of great pleasure. The opportunity is presented for the finest excursion that medical men have been asked to take in years.

A number of the members of the medical profession from Mexico, Central America, and various South American States, especially Brazil, have already signified to the committee their intention to be present at the Congress.

The trip to Havana can be made satisfactorily in ten days, allowing time for attendance at all the sessions of the Congress. Steamers that leave New York December 22d arrive the evening of December 25th in Havana. After the Congress steamers return to New York arriving January 2, 1901.

Newark City Hospital Scandal.—There is considerable likelihood of the Grand Jury, now in session, returning either indictments or presentments against certain officials of the Newark City Hospital for alleged disregard of sanitary laws in the hospital. It was also made known that the Grand Jury a few days ago paid a visit of inspection to the hospital and gained the alleged evidence.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, November 21, 1900.

PROF. CLIFFORD ALLBUTT'S HARVEIAN ORATION—MR. FREDERICK TREVES' EXPERIENCES OF THE WAR—THE GLASGOW OUTBREAK OF PLAGUE—OPENING OF THE NEW LABORATORIES AT KING'S COLLEGE BY LORD LISTER—PAUPERISM IN ENGLAND AND WALES.

The Harveian oration at the Royal College of Physicians was delivered by Dr. Clifford Allbutt and was, as might have been expected, a brilliant production. The orator's great learning, fine diction, and above all his philosophical insight into the development of medicine from its dawn as a science under the Greeks down to the present day, were combined to produce one of the best orations that have ever been delivered on this trite subject. He began with the quotation from Baas, "Harvey stands alone in respect to the world of life; his discovery of the working of the microcosm takes a place equal to, if not higher than, those of Copernicus, Kepler, and Newton in respect of macrocosm." This judgment the lecturer said he would endeavor to show was true. He sketched the history of philosophy, science, and medicine from the time of Aristotle to that of Harvey, pointing out how greatly progress was impeded by theological dogmas and philosophical theories. Brilliant as was the promise of the Renaissance, a reaction took place in the sixteenth century not only against Luther, but against all liberal learning and science. In the Vatican, in the Sorbonne, and in the Consistory, it was proclaimed that as these studies made government more difficult it were ill to encourage them. Orthodoxy crushed free thought in Italy, and in France the ruthless religious wars had ended in the triumph of Rome. Europe was overrun by Dominicans. Almost in the year of the publication of "*De Motu Cordis*" the Parliament of Paris issued an edict that no teacher should promulgate anything contrary to the accepted doctrines of the ancients. Harvey's

discovery burst like an earthquake under Galenism and other outworn sophistries. His masterly work stood eminent not only against long-winded dialectics on *Ars Sphygmica,* critical days, and like abstractions, but also against the more lurid background of folk superstitions, magic, cabalism, astrology, etc. In physics Galileo, persecuted as he was, had some current with him and before him. Copernicus had preceded him, Kepler was beside him, but in physiology the waters had closed on the path of Galen as on the track of a great ship. The anatomists, themselves Galenists, gave Harvey little help and the share of Servetus, Columbo, and Fabricius was but small in the discovery of the central fact of the science and in the method which opened the way for Pecquet to Glisson, Steno, Wharton and Willis, to Haller and Bertrand.

In a small volume, entitled "The Tale of a Field Hospital," Mr. Frederick Treves has published his experiences at the front. With vivid pen he describes the "seamy side" of war, the horrors so well known to the army surgeon. Describing the condition at Colenso he says: "Under the shelter of the ridge, and close to the great guns, four little field hospitals were pitched." When he arrived the ambulances were coming in, "the dreary ambulances each one with a load of suffering, misery, and death. There were the very khaki-clad soldiers who had not left London so long ago spick and span amid a hurricane of cheers, and now they were coming back to the camp silent and listless and scarcely recognizable as men. They were burnt red-brown by the sun, their faces were covered with dust and sweat and in many cases blistered by the heat; their hands were begrimed; some were without tunics and their blue army shirts were stiff with blood; some had helmets, and some were bareheaded. All seemed dazed, weary, and depressed. The saddest cases were those on the stretchers on the ground everywhere. On each was a soldier who had been 'hard hit.' One man paralyzed below the waist from a shot in the spine was repeatedly raising his head in order to look with persisting wonder and curiosity at limbs which he could not move and in which he could not feel. One feature was prominent in the stricken crowd—grim pluck. There was many a groan, but never a word of complaint, never a sign of whining nor a token of fear. Some were a little disposed to curse and a few to be jocular, but they all faced what had to be like men. One man said, pointing to the overworked surgeons in the operating-tent, 'They will do what they can for the lot of us and it's good enough for me.'" Referring to the nurses he says, "These ill-housed women were hard at work all Friday, all Saturday and all Sunday night. They seemed oblivious to fatigue, to hunger, and to any need of sleep. They brought to many of the wounded and the dying that comfort which men are little able to give or are uncouth in bestowing and which belongs especially to the tender, undefined and undefinable ministrations of women."

The plague at Glasgow is dying out. Four patients have just been dismissed from hospital cured. Only 10 patients remain and these are rapidly recovering. At one time there were 25 cases of plague and 125 persons under observation. The shipping restrictions are being removed.

In the presence of a distinguished audience Lord Lister opened at King's College the new laboratories which have cost $100,000 and which place the hospital in a foremost position for pathological and physiological teaching and investigation. He said that it had been felt for many years that mere lectures were not sufficient for the student and that practical instruction was imperative. In physical science King's College had long been well equipped, but the accommodation for the teaching of practical anatomy and physiology had been for some time very inadequate. Partly by the readjustment of existing accommodation and partly by the erection of additional buildings, new laboratories had been provided. Those for the teaching of physiology were second to none in the country. The anatomical department had been extended, the dissecting-room had been almost doubled, and a fine anatomical museum had been provided in its vicinity. The bacteriological laboratory had a very important addition made to it by the opening of a new room adjoining in which research could be carried on. The means of checking the plague in Glasgow and of removing the scare of it from London was entirely due to the researches carried on in bacteriological laboratories of the world.

The annual report of the Local Government Board shows that throughout England and Wales pauperism is on the decline. But the fact remains that there is still one pauper for every 39 persons in mid-winter when pauperism is at highest level. Pauperism is here used in a very wide sense. It includes all persons relieved, of whom a considerable number were lunatics, vagrants, and children under sixteen years of age. The great problem of outdoor *versus* indoor relief is still unsolved. The persons receiving the former still largely outnumber the inmates of workhouses. Indoor relief is accompanied by great harships to the deserving poor whose lives have been honest and industrious and who at last are left without friends or relatives to assist them. They are compelled to associate with and are treated just as the lowest stratum of the population whose poverty is the result of their faults and from whom they have always kept aloof before. On the other hand, outdoor relief is attended by great abuses. In some unions, according to the inspectors, "outdoor relief" is administered in a manner which is not only extravagant and costly to the ratepayers, but which tends to pauperize the people.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

DIPHTHERIA AND SCARLATINA—EARLY OPERATION IN APPENDICITIS—TREATMENT OF LOCAL INFECTIONS—WOUND CLOSURE—CHOLELITHIASIS AND GASTRIC DISEASE—OPERATIVE ASEPSIS—A NEW METHOD OF LIGATING—RENAL RUPTURE—CLUBFOOT IN THE ADULT—CAPSULE ABBREVIATION IN JOINT LESIONS—TUBERCULOUS PERITONITIS—SPINA BIFIDA—TENDON TRANSPLANTATION—INTUBATION—HEREDITARY AMAUROTIC IDIOCY—PROPHYLAXIS OF TUBERCULOSIS IN CHILDREN.

F. Wesener (Aachen) at the seventy-second convention of the Deutsche Naturforscher und Aerzte, held in Aachen, September 16-22, 1900, presented a résumé of all his observations of diphtheria and scarlatina at the Mariahilf Hospital from 1873 to 1899 both inclusive, making a total of almost 1000 diphtheria and 500 scarlet fever cases. The majority of these cases were examined bacteriologically, cover-glass preparations were made after the method of Neisser, animals were injected and cultures were grown upon glycerin-agar media and post-mortem examinations were held in all fatal cases. The culture growths were at the onset very rarely negative, and as greater skill was obtained the results were almost always positive. This was the rule especially when many plantings were made, one or more always showed the desired positive outcome. Difficulties were attendant at once upon the overgrowth of both the streptococci and staphylococci. The question of whether the pseudobacillus is a development of the true bacillus of Löffler was tested by modifying the culture media. The addition of saliva, potash and nitrites were without result, while diastase appeared to cause them to change somewhat. The experiments upon animals were successful in showing the virulence of the diphtheria; were almost always positive, a few exceptions having occurred even with cultures direct from the throats of children dead of the disease. The author contradicted the statements of Baumgarten, Gottstein and Kassowitz that the symptoms of diphtheria are not caused by the bacillus in pure infection, for in many of his patients severely sick the streptococcus was absent. In the post-mortem examinations this coccus was very frequently found. Of the 1000 cases, 206 had nephritis, which appeared in the first week in 67, second week in 128, third week in 9, and fourth week in 2 instances. Therefore he concludes that the early appearance of an albuminuria in a doubtful case tends to the diagnosis of scarlatina. Positive results were not reached in his investigations for a vegetable or animal cause of scarlatina In his view the unknown agent operates at the moment of invasion while the later factor in the clinical picture is the mixed infection with streptococci. The nephritis of this disease is regularly either catarrhal or septic or glomerulonephritis and is probably due to this coccus which was easily demonstrable in the kidneys. The hemorrhagic form secondary to a purely catarrhal is the variety most feared and is best avoided by adhering to an absolute milk diet. This is illustrated by the absence of death among all the cases of nephritis developed after admission, while it occurred eighteen times in fifty-four cases of nephritis present at admission. A forerunner of this complication was a mild angina appearing in the third week. A certain predisposition to kidney lesion exists in some families. Rheumatism and nephritis appear to be mutually exclusive.

Rosenberger (Würzburg) treats all acute cases of appendicitis with incision and drainage, ablating the organ only when it is very easily reached at the first sitting. His rules of management for the average practitioner are briefly summarized and supported thus: This operation is entirely simple and safe. If pus is present, outlet for it is thereby provided; if pus is not present, outflow for it will be at hand if the process goes on to rupture of the appendix and accumulation of exudate and secretion, which would lead up to a general peritonitis. Through this method recurrences are not absolutely provided against, because the rule is not to remove the appendix. If any fresh attacks occur it is time to do this during an interval. The operation is at that time without much danger. Large abdominal hernias are not common. His opinions were based on fifteen successful cases.

Bardenheuer (Köln) emphasized the following points in the handling of infections: The earliest possible and wide incision under general, never local, narcosis and previous tying-off of the member. Lateral incisions in inflammations of the tendons and tendon-sheaths or peritendinous regions afford better drainage and oftener spare the structures more. The sheaths must be opened only when pus is actually within them and then all care must be taken to avoid division of the ligaments of the sheaths.

Schultze (Duisburg) has been successful in closing wounds without suture and danger of infection from needle-punctures by using clamps. The wound is stretched so that its edges are in close contact. It is then clamped at intervals of about 2 cm. Gauze and iodoform collodion are next applied and when the latter is dry the clamps are removed.

Petersen (Heidelberg) reported that in 102 cases of gastric disorder cholelithiasis was the certain cause in 12 and the probable cause in 5 instances. The following anatomopathological conditions could be differentiated: (1) Pressure of the enlarged stone-loaded gall-bladder directly upon the duodenum; (2) pressure of a single large concretion from the cystic or the common duct upon the same viscus; (3) displacement of or encroachment upon the duodenum by a perforated stone; (4) pericholecystic processes,

usually hard to distinguish from perigastric processes. These operate in one or several ways combined, as follow: (1) Congestion of the duodenum by adhesion bands; (2) traction and angular deformity of this viscus or of the pylorus; (3) scar tissue contractures of the duodenum. Usually many factors are associated in each case. The most important clinical symptoms are (1) duodenal or pyloric stenosis, (2) gastralgia, (3) hematemesis due to the perforation of gall-stones or to progressing thrombosis, (4) presence of lactic acid with decrease of hydrochloric acid, which occurs oftener than with pure gastric ulcer. Pericholecystic processes and very large occluding stones may simulate carcinoma. Surgical therapeusis must fulfil the following conditions: (1) Relief of local disorders; (2) division of adhesions; (3) removal of gall-stones; (4) drainage of the gall-passages; (5) in the complicated local lesions with manifest alterations in the condition or position of the stomach must be added gastro-enterostomy; (6) duodenoplasty; (7) pyloroplasty.

Katzenstein (Berlin) reported remarkable asepsis during operations by following these few precautions. The fingers come into contact with the wound as little as possible. When they must do so unavoidably they are bandaged with sterile linen. All instruments are handled so that the part concerned in the wound is not touched. The dressings are arranged with forceps altogether and are kept in a large Schimmelbusch container, subdivided into compartments of various size which hold a given style of dressing each. His experience with the above covers two years. The same author demonstrated an apparatus for supplanting catgut ligatures with fine silver wire rings. The instrument consisted of a part for holding the rings serially and securely and another for advancing them to the clamp which fastened them upon the bleeding vessel.

Stern (Düsseldorf) reported two cases of renal rupture following compression about the lumbar region. The first was cured by free exposure and tamponade. The second was treated successfully by primary extirpation for severe hemorrhage. These cases served to exemplify the fact that every renal rupture is a law unto itself determining whether removal suture or packing will be proper.

Vulpius (Heidelberg) gave notes on 37 cases of clubfoot in patients thirteen years old or over which he had successfully treated by plastic operations in several sittings. The division of the tendo Achilles is his last step. Plaster-of-Paris fixation is continued from two to four months. Even in paralytic cases of long standing he always carries out transplantation of tendons. Among his patients 28 were treated at their fifteenth, 10 in their twentieth, and 6 in their twenty-fifth year of life. Only two cases had been lost sight of. In all the others the results were permanent.

Bardenheuer (Köln) operates for chronic luxation, weak knee, chronic traumatic hydrops of that joint, as follows. The knee-joint is widely exposed before it is opened. Through a semilunar incision the inner side of the joint is freely entered. The capsule and the ligamentum patellæ are divided outside of the synovial membrane obliquely. Then the back layer of the capsule is drawn over the front and sutured. The vastus internus is freed and stitched to the patella. The inner margin of the quadriceps tendon is lapped and sutured, thereby shortening it. The outer margin is left to itself. Thus the patella is fixed. In one case of luxation of the tibia a good result was obtained. Three other cases were still strong after six months.

Bartz (Eschweiler) reported two five-year-old cures of tuberculous peritonitis by laparotomy. The factors of any cure in his view are the hyperemic following laparotomy and a transudate rich in leucocytes. He then showed a nine-year-old boy cured of a large spina bifida by the method of Schmidt. By this procedure the large unopened sac is freed up to the hernial orifice, then punctured, inverted entirely and sutured to itself, thereby forming a tight tampon.

Frank (Köln) reported a case of rachitic clubfoot in which Bardenheuer had transplanted the tibialis posticus tendon upon the anticus and shortened the ligaments of the pronation side, namely, the deltoid ligament.

Quadflieg (Aachen) reported that in the Mariahilf Hospital of 310 sick children 43 were intubated and at the same time inoculated with antitoxin serum. Of these 24 required secondary tracheotomy, only 19 intubation alone of whom 2 died. There were 63 instances of primary and secondary tracheotomy with 16 deaths. Intubation is advised for children under one year of age because pneumonia is less likely to occur. The tube remains *in situ* two days and is then removed. More than three intubations must not be done on the same patient. The temperature regularly rises after the insertion. No intubation is done without carefully watching the patient after it, because sudden death may follow coughing the tube out. Intubation cannot supplant, but may be an adjunct of tracheotomy.

Falkenheim (Königsberg) described the lesion observed in a carefully examined and followed case of hereditary amaurotic idiocy. The parents were brother and sister in a family of decided hereditary taint that gave the direct source of the condition which in the severely affected child was the following: In the neighborhood of the macula was a gray-white blotch disappearing toward the papilla, but sharply demarked at the centrum against a dark-red spot. Another child had the same picture. In all but two of twenty-three cases were the changes about the macula primary and the optic atrophy the secondary lesion. This was a true atrophy not accompanied by any inflammation. In all the noted cases the children were at first healthy, then amaurosis began after a few months, later

paralysis, idiocy, spastic cramps and death, usually before the end of the second year. Ordinarily the disease affects several members of a family, for example, he has seen four families with four cases, five with three, one with five and four each. The course of the disease is very irregular and often interrupted. Systematic use of the ophthalmoscope will discover the disease more frequently than might be supposed, but only in the families of Jews.

Feer (Basel) stated that tuberculosis afflicts 50 per cent. of all invalids, 30 to 40 per cent. of all children in a latent form not counting frank forms, reaches its maximum death-rate among children between the first and second years, gradually recedes up to the fifth and touches its lowest level from that to the tenth year, and is very rarely congenital. Therapeutic measures are of very little value, consequently prophylaxis is all the more important, especially among children. Many obscure sources of infection can be stopped. The greatest means are food and air. Attention must be given to secure good food, pure air, hygienic surroundings, abstinence from marriage among tuberculous individuals, and breast-feeding only by sound nurses and mothers. Tuberculosis is a disease of dwellings and increases in direct ratio with the increment in the density of the population. The erection of tenement barracks and rear-houses should be legally forbidden; wide, clean streets are desirable, roomy dwelling quarters and the best room devoted to sleeping must be the rule. Volland has called tuberculosis a sickness of the filthy, hence we must care for personal cleanliness, best through the mother, who must be shielded from the struggle for food. Frequent changes of clothing must be enjoined, with baths and especially among the older children cold baths for their stimulation. The care of the mouth and teeth is most important and also avoidance of kissing which may readily infect. Adenoids, bronchitis, pertussis and rachitis all demand prompt and careful management. In bed a child is quite well protected, when it begins to creep and walk new dangers threaten, which clean carpets or better no carpets will do much to meet. No trains should be tolerated on women's skirts. Careful isolation of all tuberculous in separate hospitals and sanatoria is more and more advised. No family with children should keep diseased servants or boarders. The food of children must be carefully cooked, especially milk and meat. No alcohol must be given them. According to Cornet the bacillus soon dies in the sunshine and in the fresh air in a few days. This is exemplified by the fact that factory hands die of the disease much oftener than farm hands. Consequently cities should be supplied with many parks, playgrounds and open places. Probably wateringplaces are of advantage. All quarters of those dead of the disease must be fully disinfected and promiscuous expectoration enjoined. Systematic instruction of the populace, adult and children alike, will be of great value in showing them how to avoid the disease by proper hygiene in their community, dwellings, person, clothing, habits, preparation of food and physical exercise. Water, sunshine, fresh air and good food are the best guardians against the disease and should be watchwords.

SOCIETY PROCEEDINGS.

HARVARD MEDICAL SOCIETY OF NEW YORK.

Stated Meeting, Held October 27, 1900.

The President, John B. Walker, M.D., in the Chair.

Prostatic Enucleation.—Dr. Howard Lilienthal read a paper on this subject illustrated by his personal experience in a recent discouraging case. The patient was a man, seventy-seven years of age, who for fifteen years had passed no urine without a catheter. His catheteral life was not without incident. While he had grown accustomed to the passage of the instrument and no reaction followed its ordinary use, at times, as the result of various causes, congestive conditions in the prostate made catheterization impossible. These recurring attacks were becoming more frequent and more threatening about the time that double castration for hypertrophied prostate was advocated by Dr. White. Both testicles were removed, but the improvement was not permanent. For a time, just after the operation, some relief was afforded, but the daily use of the catheter could not be given up and after a time all urine had once more to be drawn by the catheter. After castration, however, there was a freedom from the recurrence of acute attacks with absolute retention, which showed the removal of the testicles had not been entirely without effect.

Condition Before Operation.—For the last four years the patient had been suffering from septic cystitis with offensive urine and deteriorating general health because of the constant absorption of septic matter from the bladder. Careful examination showed that his prostate was considerably enlarged, though not so much as might have been anticipated from the severity of his symptoms and the absolute necessity for catheterization. The prostate was, however, very hard and the conclusion was that the hypertrophy was fibrous in character. It was suspected that the middle lobe was especially involved in the enlargement. This would produce a valve-like effect with complete closure of the urethra except when this lobe was pushed out of the way by an instrument.

Fuller's Method.—The removal of the prostate was accomplished by Fuller's method. This was selected because it promised the best hope of permanent relief with the least danger from hemorrhage and with a free opportunity to see

the condition present in the prostate. The patient was old and weak and loss of blood was above all to be avoided if a successful result was to be obtained. When the suprapubic incision was made the condition of the prostate was found to be almost exactly that which had been suspected as the result of the examination. The ball-valve action of the middle lobe was especially noticeable. The mucous membrane over the prostate was incised and the prostate pushed well up by an assistant's finger in the rectum. The left and middle lobe of the prostate were removed together and the right lobe was taken away. At no time during the operation was there alarming hemorrhage. Whatever bleeding there was ceased spontaneously when the operation was completed. In these cases of fibrous hypertrophy of the prostate the gland shells out easily from its connective-tissue capsule and hemorrhage is usually not severe. An opening in the perineum was made in order to secure thorough drainage. For some reason this did not prove satisfactory. Drainage was then effected through the suprapubic opening by continuous syphon action. The wound in the perineum was allowed to close as soon as it was found that successful drainage could be accomplished without it. The abdominal opening was allowed to heal up gradually, and in four weeks the patient was relieved of the inconvenience of drainage by this avenue.

The Results of Operation.—The operative results have been most satisfactory. For twenty years the patient has not been able to pass urine voluntarily. He is now able to urinate freely and passes a good stream. There is slight tendency to incontinence of urine which causes some dribbling at night, but even this is growing less as time goes on. About one ounce of urine is retained in the bladder and at times no retained urine can be found at all. The patient is able to hold his urine for three to four hours and then passes it perfectly normally.

Fibrous and Soft Hypertrophy.—Cases of fibrous hypertrophy of the prostate are those that promise the best measure of success for operation. The enucleation of a fibrous prostate is accomplished rather easily and without serious danger from hemorrhage. Prostatic hypertrophy of the softer varieties are not suitable for enucleation. Complete removal of the gland is difficult, more cutting is required and there is more danger of a hemorrhage. It is probable that in these cases the burning of a groove in the prostate will prove to be the best operation. These grooves need not be burned in the dark at the depths of the urethra, but should be made under the direction of the eye after a suprapubic incision. The future of prostatic surgery does not depend on the employment of any one ideal method for the treatment of all enlargements of the prostate, but in the proper selection of that one of various methods of treatment most suitable for the special case.

Discussion of Cocainization of the Spinal Cord.

Unsatisfactory Cases.—Dr. Egbert Grandin gave the details of two cases in which he attempted to operate during anesthesia by spinal cocainization. In these cases the method had failed utterly to fulfil the promises made for it. In the first case he wished to do a curettement of the uterus and make an exploratory abdominal incision. The patient was blindfolded, her ears were stuffed with cotton, she was placed in an exaggerated bicycle position and three attempts were made by the expert in this form of anesthesia to insert the needle into the spinal canal. This was finally accomplished and after the usual wait of ten minutes the curettement of the uterus was begun. Pain was not experienced and this operation was accomplished very satisfactorily. After this the patient was placed upon her back and the abdominal incision was begun. The cutaneous and tendinous tissues were not sensitive, but the moment the peritoneum was touched there was a howl of pain. Every time that an attempt was made to incise the peritoneum this was repeated and it was found impossible to continue the operation under the cocaine anesthesia. The cocaine expert suggested a second injection into the cord, but as this would necessitate putting the woman sitting up in the bicycle position once more and as there was already an incision in her abdominal wall down to the peritoneum the suggestion was not accepted. The exploratory laparotomy was continued and completed under chloroform anesthesia. In the second case a posterior vaginal section was attempted and was accomplished without difficulty. There was some vomiting just before and after the operation was begun. An eery feeling caused by operating on a conscious individual was one of the experiences of the operator. Such feelings have been described by the older surgeons who operated before the introduction of anesthesia. It does away with a certain sense of security and freedom to continue the operation that the presence of general anesthesia gives. After neither of these cases was there any toxic reaction from the cocaine. It was not followed by rise of temperature, headache, depression nor vomiting. During the interval between the giving of the injection and the coming on of anesthesia there was in each case a tendency to vomiting. On the whole, Dr. Grandin's experience with spinal cocainization is not satisfactory and he would wish to hear further on the subject.

Favorable Cases.—Dr. Brewer said that he had had personal experience with spinal cocainization in six cases. In the first he failed to reach the cord and produce anesthesia because the needle was not long enough. In the second case he injected about a sixth of a grain of cocaine into the cord and succeeded in doing an appendicitis operation with great satisfaction to himself and the patient. In a third case he in-

jected the same amount of cocaine in order to evacuate an ischiorectal abscess. This abscess had burrowed extensively and the patient was an extremely nervous individual. When the anesthesia seemed complete the patient was put in a position for the abscess to be opened. The moment an attempt was made to cut, he cried out with pain. After a wait of a few minutes another attempt to make an incision had the same result. Dr. Brewer then said aloud to the assistant to give the man chloroform. It had been understood beforehand that chloroform should not be used, but some odoriferous substitute, such as alcohol or bay rum, put on the inhaler. The patient was assured that after a few whiffs of this he would feel no pain. The cone was placed over his head and he was directed to breathe deeply. The muscular tension at once relaxed and after a few minutes, though no general anesthetic was administered, the operation could be proceeded with without difficulty. The patient said afterward he experienced absolutely no pain. He had the sensation of contact and the dragging feeling of the cutting, but no discomfort beyond this. In order to evacuate the abscess thoroughly, a six-inch incision had to be made and to get at pockets of pus sensitively inflamed tissues were rather roughly handled. In a fourth case an excision of the knee was done under spinal cocainization. The patient talked quietly, asked questions and was perfectly unconscious of any discomfort during the operation. A number of sections of the tibia and repeated sections of the condyles of the femur were made in order to secure good bony apposition, but the patient did not wince once during the sawing and it was evident that sensation was completely obliterated, even in the deepest tissues. In the fifth and sixth cases house surgeons performed operations by this method of anesthesia, under the speaker's supervision. In one case a partial resection of the foot was very satisfactorily performed and the patient was much better satisfied than if he had been put under general anesthesia. In none of these cases were there any annoying after-effects, no nausea or vomiting, no depression or fever and no headache or general disturbance. Toxic symptoms from the cocaine, such as have been noticed by some observers, were absent. Dr. Brewer is of the opinion that a fifth of a grain of cocaine may be injected into the spinal cord with perfect safety and without the production of unpleasant symptoms. The method of anesthesia by spinal cocainization is as yet *sub judice*, but he believes that it will prove a most helpful adjunct to the surgical anesthesia of the future in certain complicated cases where general anesthesia is for some reason contraindicated.

Advantage of Spinal Cocainization.—Dr. Edward M. Foote pointed out the fact that, while the method of anesthesia by spinal cocainization has not yet reached a status where it may be used in private practice, the continuation of its investigation is eminently desirable. In military surgery, for instance, the use of this method of anesthesia would prove a great blessing. The military surgeon can carry with him in a small vial all the material necessary for hundreds of cases. This would result in a distinct simplification of military field surgery and doubtless also in a great saving of life and human suffering. This prospect alone is sufficient to justify experimental work upon the subject.

Contraindications.—It has taken many years to determine the contraindications that exist for the administration of chloroform or ether, as an anesthetic. Doubtless it will be found that cocaine also is contraindicated in certain diseased states and very probably, too, that certain individuals have an idiosyncrasy for the drug. Meantime certain accidents and annoying sequelæ will follow its use in some cases because of want of knowledge as to these details. Because healthy women react well to cocaine is no sure sign that other patients may not suffer from its use. In obstetrics spinal cocainization has proved a simple, harmless, effective procedure. In the healthy perfect anesthesia can be obtained in nearly every instance, but is not so easy of attainment in certain other cases. Dr. Foote saw an operation for hernia under this form of anesthesia on an old and feeble woman at the City Hospital. The injection was made into the cord without any difficulty, and the usual ten minutes were allowed for the development of anesthesia. A certain numbness developed in the lower limbs and the skin became insensible, but the underlying tissues retained their sensation. The operation was performed, but with a great deal of difficulty and amid many complaints. The impression on bystanders was that the anesthesia was not as good as might have been obtained by the local use of eucaine. Very little depression was noted after the operation, but three days afterward the patient sank and in spite of stimulation death took place. The fatal issue was not attributed to the cocaine but to a diseased heart which gradually gave way.

Intoxication.—In a second case an operation was performed for hemorrhoids by a house surgeon at the City Hospital. The patient was old and suffered from advanced chronic nephritis. Spinal cocainization seemed indicated and the anesthesia obtained by this method was very satisfactory. Recovery from the effects of the operation itself and from the anesthetic ensued without disturbing symptoms. Three days after the operation, however, coma supervened. This was thought to be uremic in origin and was treated as such. Notwithstanding the fact that the patient was made to sweat profusely and that an abundance of urine was passed, the symptoms constantly grew worse. The breathing took on a peculiar rhythmic character, the first phase of which consisted of superficial rapid inspiration, gradually getting deeper and louder, until a climax was reached when the succeeding phase

of lighter breathing ensued until no respiration at all could be noticed. The symptoms seemed suspicious at least of an intoxication and the thought naturally occurred that the poisonous influence of the cocaine upon the breathing centers was the reason for the peculiar symptoms. It is possible, of course, that ether would prove fatal in such cases, but it seems wiser in the present state of knowledge to risk the administration of ether rather than the unknown results of cocaine on the central nervous system.

Administration.—Dr. Royal Whitman said that he had operated on children under spinal cocainization in three cases and in two of them had secured excellent anesthesia. These two children were previously operated upon under general anesthesia and expressed themselves as much better satisfied with the new method. In children at least it is not necessary to make the patient sit up in order to make the injection into the cord; they need only be turned on their sides. Dr. Brewer also said that there was no need for patients to sit up. As a matter of fact the bending forward of the spinal cord does not increase appreciably the distance between the lumbar vertebræ. This can be demonstrated upon any skeleton. There is plenty of room for the insertion of the needle, however, and it is not a difficult matter to enter the subarachnoid space.

Dr. Lilienthal said that doubtless the new method would find a place in surgical technic. It is not, however, so entirely without danger as some heedless experimenters claimed. He himself has had a patient die on the table as the result of the withdrawal of a small syringeful of cerebrospinal fluid. The case was one of suspected tumor of the brain. An autopsy was not allowed. The use of this form of anesthesia in confinement cases certainly seems unwarranted until more is known of the after-effects of the drug upon the central nervous system.

BOOK REVIEWS.

Diseases of the Intestines. A Text-Book for Practitioners and Students of Medicine. By Max Einhorn, M.D., Professor of Medicine in the New York Post-Graduate Medical School, etc. New York: William Wood and Company, 1900.

In his preface Dr. Einhorn says that the more recent English medical literature contains no monograph on this important subject of diseases of the intestines. Recent advances in our knowledge of these affections are certainly great enough to deserve separate treatment. Those who know and appreciate Dr. Einhorn's work on diseases of the stomach will realize how well he is fitted to supply the gap in English medical literature and to write this continuance of the subject of disorders of the digestive tract. The book is written in a practical helpful style that cannot fail to make it of value, not only to the specialist in digestive diseases, but also to the general practitioner. The chapter on examination of the feces is especially satisfactory.

The subject of hemorrhoids receives the detailed treatment which the frequency of this affection requires. The chapter on appendicitis takes up one-fifteenth of the book and is a good index of present-day interest in apparently the most insignificant part of the intestines. The subjects of diarrhea and constipation are very satisfactorily treated. The discussion of nervous diarrhea is especially complete and can scarcely fail to be of practical service to the puzzled practitioner who often finds himself at a loss in handling the condition. The fact that nervous diarrhea can sometimes be controlled by suggestion, or, at least, by the patient's effort to avoid having stools at certain times is illustrated by several striking cases.

On the whole the book is well calculated to bring the practitioner's knowledge of advances in intestinal diseases up to date. It forms a worthy addition to the monographs on special subjects that have come from the hands of American medical specialists.

The International Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. 1900. Eighteenth Year. New York: E. B. Treat and Co. Price, $3.00.

This volume upholds the reputation of the series already well established by the preceding volumes. The first sixty pages are given up to a dictionary of new remedies and a review of therapeutic progress during the year 1899. The rest of the volume is devoted to new treatment in medicine and surgery. Many of the remedies mentioned in Part I. as new were, however, new previous to the year 1899, while some remedies which were first given to the profession in that year are not mentioned at all. The part on new treatment will prove of value to general practitioners, embracing as it does the results obtained by eminent investigators in all parts of the world. There are also a number of original articles from the pens of well-known authorities. The many references which accompany the articles and abstracts, each necessarily brief, give the volume additional value as a reference book to those who have access to a medical library. The articles cover a long list of diseases and symptoms—practically the whole field of medicine and surgery, as the volume is intended to do. They show the latest trend of medical opinion as to the best and most efficacious treatment in the various diseased conditions.

On the whole, the volume is well worth having in one's library. There are a great many illustrations from photographs and some colored lithographs in the book. Most of the illustrations are good, but some are mere blotches of ink.

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ORIGINAL ARTICLES.

AN IMPROVED TECHNIC IN AMPUTATION OF LARGE RECTAL PROLAPSE.

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IN a case of large rectal prolapse recently under my care at the Brooklyn Hospital the following method of carrying out the procedure of amputation of the prolapse proved to be comparatively easy of performance, and was followed by a most excellent result. The patient was a male in whom the mass protruded about five inches, and had been in existence for five years.

Analgesia was effected by means of spinal cocainization. The patient was placed in the combined lithotomy and Trendelenburg position. Being fully conscious he was able to bear down forcibly and extrude the prolapse fully, thus doing away with the necessity for traction upon the latter. A row of fenestrated or ring-headed forceps (common artery clamps will answer, but do not hold so well) was placed just in front of the junction of the mucous membrane with the skin of the anus in such a manner as to pinch up a circular fold of the mucous membrane of the outer cylinder for the entire circumference of the gut. About half an inch in front of this again an incision was made, likewise for the entire circumference of the outer cylinder of the gut, this incision extending through the mucous membrane only. Its proximal edge was dissected back for a half-inch. Two clamps were now placed, one upon either side, at the point of the prolapse, or the place where the outer cylinder of the gut returns to form the inner cylinder. With the mass thus steadied and the two cylinders identified, the index finger of the left hand was passed up the inner cylinder, and with this as a guide the circular incision already made in the circumference of the outer cylinder was deepened to the extent of a half-inch so as to include the remainder of the thickness of the latter and the inner cylinder through its entire thickness to the finger inside the latter. A suture of catgut was now placed so as to include the entire thickness of the two cylinders where the half-inch opening was made, with the exception of the turned-back mucous membrane cuff at the anal mucocutaneous margin grasped at first by the fenestrated forceps. This step of the operation was repeated until the entire circumference of the cylinders was transversed, save that each subsequent suture was first applied and the incision extended afterward. Care was taken that each extension of the incision was carried no farther than the area previously secured by the suture. Throughout this portion of the operation a stream of warm borosalicylic (Thiersch) solution was kept playing upon the parts. When the posterior portion of the circumference was reached the mesenteric attachment of the gut was encountered. This was treated precisely as the anterior portion, no difficulty being encountered in securing the vessels of the mesentery in the suture. As the last suture was applied the final cut was made in front of it, completing the amputation of the prolapse. The dissected-back mucous membrane at the mucocutaneous margin, which up to this time had been held in the grasp of the forceps first applied, was now replaced and sutured in position over the first row of sutures. Alcohol-boiled catgut was used as suture material throughout the entire operation. The patient suffered not the slightest pain during the operation, nor inconvenience either then or thereafter from the spinal cocainization, save slight nausea and mild headache. An opium suppository was placed high up in the bowel, and the parts replaced. A light tampon of zinc-oxide gauze was placed in position for forty-eight hours, after which it was removed and a castor-oil cathartic given, followed in three hours by a sweet-oil enema.

The advantages of this method consist (1) in the use of the combined lithotomy and Trendelenburg position, in order to prevent the descent of the small intestines during the operation, and thus providing against injury to these during the suturing; (2) in turning back a cuff at the mucocutaneous margin for the purpose of preserving the normal conditions at the rectal outlet, and at the same time permitting the removal of all the relaxed and overstretched mucous and submucous structures at this point. This cuff also provides a covering for the sutured edges of the stump of the prolapse and diminishes opportunities for subsequent infection; (3) in the step-by-step application of, first, a suture and then an extension of the incision through both cylinders to correspond with the sutured area, in this manner avoiding exposure of the peritoneal cavity to infection.

It is not claimed that this operation possesses all of these advantages exclusively. Several of them are features of one or another operation. I do not remember, however, to have seen them all combined in one procedure before.

A MODIFICATION OF THE MOSQUITO THEORY.[1]

By CHARLES R. GRANDY, M.D.
OF NORFOLK, VA.

I do not believe there is a single physician in this Society, who has not given some thought to the subject of the causation of malarial fever, with especial reference to the mosquito as an active agent in its dissemination. There is naturally a wide difference of opinion on this subject, and physicians have as usual divided themselves into two classes—those who do and those who do not accept the mosquito theory, but the line of division between the two factions is more sharply drawn in this discussion than is usually the case. On one side we find a number of younger men, who have used the microscope and who have had hospital and laboratory experience with the fever; while on the other side are the men who have lived their lives in places where malarial fever eternally dwells, and who have exerted their best efforts in combating it. The first class, the progressive, but at times too enthusiastic class, has adopted the mosquito theory. But the second class looks on it with doubt and distrust, and, while allowing that mosquitoes may at times cause the fever, it is not prepared to accept them as the sole method of spreading this disease, and indeed many physicians claim that the mosquito has nothing whatever to do with malaria.

In order to obtain the opinions of the men of this latter class, a circular letter was sent to many of the country physicians practising in Eastern Virginia and North Carolina—men with large experience with malarial fever in all its varieties, and the answers of some sixty of them have been tabulated and much valuable information has been acquired as the result. It is a noteworthy fact that among the sixty who answered only one person was found who believed that the mosquito theory accounted for all cases of malarial fever. Why is it, then, that these men all look with skepticism on the mosquito theory? Its warmest advocates say that they of the other side do not understand it, or that they are prejudiced. But, while this is certainly true in many instances, there are still a large number of men with wide experience and good judgment who claim that this theory does not explain all the existing conditions, and who, although they acknowledge that mosquitoes can directly transfer malaria from one person to another, believe that this theory cannot possibly account for all of the cases of malarial fever. We must not forget, however, when criticising the mosquito theory, that its originators do not claim it to be proven that malaria can only be transferred directly by the mosquito, although they evidently believe that this is the case.

[1] Read at the meeting of the Medical Society of Virginia, held at Charlottesville, October 23, 1900.

It will be well, in discussing the mosquito theory, first to state what it is in a few words, and then to criticise it in the light of existing conditions, and see where it applies and where it does not apply. Briefly it is this and it has been demonstrated to be possible by actual experiment. If a mosquito of the genus *Anopheles* takes malarial blood into its stomach, the malarial organisms, having freed themselves from the corpuscles, invade the stomach-walls, develop there, and in about ten days' time produce a number of young organisms, which pass through the blood-vessels into the parotid glands of the mosquito. They can then be injected into the blood of another person, who after some little time develops the same variety of malarial fever as the man from whom the original parasites were taken. It is only in mosquitoes of the genus *Anopheles* that the plasmodium can develop, the *Culex* being entirely incapable of transferring the disease.

In considering malarial fever, or any other disease for that matter, we must not forget the personal equation, although it often seems to be entirely lost sight of in a discussion of this sort, for Nature has always provided means by which the body can combat disease, even though it be often unsuccessful in its attempts. Thus in a healthy, vigorous man, who has not had a very large injection of malarial organisms, the leucocytes can often destroy all or most of the plasmodia, or can keep them down so as to prevent them from producing symptoms. Then it is necessary for some external cause to lower the bodily vigor, before the organisms can attain sufficient numbers to produce appreciable symptoms. It is also probable that a person can become partially immune to the poison through frequent attacks or through heredity. The organisms may thus often remain a long time dormant in the blood without causing any trouble. Every one who has examined blood recognizes this as a fact; and it is likewise proven by clinical experience, when the fever returns in a week or three weeks, or when it first appears after the person has removed from a malarious district.

The mosquito theory explains satisfactorily many of the well-known conditions which have long been recognized as aiding in the production of the fever. To begin with, malaria in these regions is prevalent when mosquitoes abound, *i. e.*, in August and September. It disappears for the most part when mosquitoes disappear—that is, at frost. Cases which remain or appear in winter or early spring are attributed to latent disease, which is made active by some external cause lessening the resisting power of the body. In eastern North Carolina cases of malarial fever are found in every month of the year, but they are much more common and much more severe in late summer and early autumn. Marked changes in temperature seem to have a striking influence in bringing out this latent

malaria, which is especially liable to occur in early spring. These cases, however, are almost always mild and are easily controlled by the use of quinine. Then *Anopheles* mosquitoes have been found in every markedly malarious district. There are places where there are many mosquitoes and no malaria, but these mosquitoes, when investigated, have almost without exception been found to be of the genus *Culex*, as, for instance, I found myself to be the case in northern Michigan. Finally, there has recently come the report from Italy, that five men have lived a month in a very malarious district, working hard by day, but being protected from the mosquitoes by night; and that these five men did not contract the disease, although they took no quinine, while others, doing the same work, but unprotected from the *Anopheles*, suffered from grave forms of malarial fever.

There are, however, objections to the mosquito theory as it now stands, and the great objection to my mind is that it claims that malaria can only be propagated by the direct transportation of the organisms from one man to another. I do not for an instant contend that this does not often occur, for I consider this much a proven fact, but I cannot bring myself to believe that the mosquito alone obtains and disseminates the plasmodia in this way. This, too, seems to be the point to which the men with the largest practical experience cannot subscribe, for they do not consider it possible for all the cases of malarial fever to be produced by this direct inoculation.

There is another objection to the mosquito theory to which I have not as yet heard a satisfactory answer. It is this: If the life cycle of the plasmodium is only to be found in man and the mosquito—that is, that the mosquito takes them from one person and directly inoculates another—and if there is no other host or medium which may at times shelter these organisms, the most malarious districts could be freed from this disease by being depopulated for a year, or at most two years. My reasoning in this matter is very simple. The mosquito only lives a short time, a month at longest, except when it hiberrates. If all the infected mosquitoes died, without inoculating more people, as they certainly would do in two years' time, the most malarious district would become healthy. This, however, as far as I have been able to learn, is not in accordance with fact; there being some districts so malarious as to have made depopulation necessary, and yet it appears that if a man goes into such a region, he will contract the fever. Then, too, if an army camps in a swampy, sparsely-populated country, the soldiers contract the fever, and contract it in places where men rarely if ever come. The *Anopheles* do not seem to fly far from their breeding-places. Is it therefore likely, if malaria is only contracted through the mosquitoes, that they have all had the opportunity to digest malarious blood?

Manson believes (or believed) that the mosquitoes give up the parasites when they lay their eggs and die in the water, and that the parasites are then taken into the system by men who drink the water. This is in accordance with what he found to be true in the case of the *filaria sanguinis hominis*. The objection to this is that all the recent investigations have gone to show that malarial fever is *not* contracted from drinking water, either because the malarial organisms cannot live in it, or because they are destroyed by the human stomach secretion, just as they are destroyed in the stomach of the *Culex*. I have a very good example to the point, which I would like to add to those already published. The city of Norfolk obtains its water from ponds lying in a notoriously malarious district, yet the paved and sewered part of the city has long been almost free from malarial fever, although the unpaved and badly drained suburbs, some of which use the same water, have many cases of the fever. Then the City Almshouse, which lies near the water-works and gets its water from it, has regular yearly outbreaks of malarial fever. Last winter a very complete sand-filter plant was instituted, yet there has been no appreciable change in the malaria in any one of these places, perhaps there have been a few more cases this summer than is usual in the city. How, then, can we account for the fever? Around the ponds are found large numbers of *Anopheles* which breed in the drinking water (which, by the way, contains many algæ), and in the suburbs *Anopheles* have also been found. Where this mosquito is found, there we find the malaria; but the drinking water, filtered or unfiltered, has no appreciable effect, as the people in all these localities use the same, yet one place is almost free from malaria, while another has regular outbreaks in the autumn.

Then it has been thought that the plasmodia might pass through the eggs into the larvæ and remain till the mosquito was grown, and that they then could be inoculated by it. This seems to be true in the case of the organism that produces Texas fever and which is inoculated by a tick, but actual experiment has disproven it in the case of the human malarial organism.

There is another modification of the mosquito theory which overcomes these objections, and, although it is still mere hypothesis, it appeals to me strongly. To begin with, we will acknowledge that in a certain number of cases malarial fever is directly transferred from man to man by the *Anopheles;* so much is proven beyond question. But I believe this to be the fact in only a very limited number of cases. How then can we account for the great majority of cases of fever? I still believe in the potency of the *Anopheles,* but believe that they can, and do, obtain the organisms from other sources than direct from the human blood. We know that this genus injects the young malarial organisms from its parotid gland into the blood of the man

upon whom it is feeding. Is it not likely that it, when feeding on other things than human blood, which seems to be more of a delicacy than a staple article of diet with the mosquito tribe, should also inject the parasites into whatever it is eating? Other uninfected *Anopheles* may take in the parasites directly from this food or water; or the plasmodia, in the form in which we find them in the parotid glands, may be able to live in water or damp soil as other sporazoa do, and later on they may be taken up by other *Anopheles* and be inoculated by them into man. It is also possible that the plasmodia may pass into the water from the bodies of the *Anopheles*, which have died in the water after depositing their eggs, and may be taken up in feeding by other mosquitoes.

All the arguments in favor of the mosquito theory apply equally well to this modification, but the modification explains some points to which the original does not thoroughly apply. Let us, then, briefly criticise this modification of the theory and see if it will hold good under all conditions. Naturally many of these will apply to the theory as it now stands, as well as to its modification. In the first place wherever malarial fever regularly appears, there we find the *Anopheles*. There may be places with this mosquito and without malaria, but if the disease is brought there by man, the insect can spread it.

This has been observed in the case of an East Indian island, whither the fever was brought from India, and where let us remark it still remains. The *Anopheles* breed only in pools and not in tubs; they are the country mosquito in contradistinction to the *Culex*, which is found in both towns and country. This explains why there is so much more malaria in the country districts. They feed at night, which fact explains the influence of night air in producing malarial fever. They are most numerous at the time of the heavy dews (in August and September), the effect of which is thus accounted for. Their larvæ feed on algæ, hence the theory that stagnant water causes malaria. It has long been noted that the digging up of old swampy soil causes an increase in the number of cases of malarial fever. This can be accounted for either by furnishing fresh breeding-places for the mosquito, or possibly by the exposure of dormant parasites, which are then taken up by the *Anopheles*. Malaria is severer in warm, rainy seasons, because this both furnishes the insect with more and better breeding-places, and likewise allows it to obtain more of the extracorporeal organisms. On the other hand, the drainage of the soil deprives the *Anopheles* of breeding-places and kills the extracorporeal organisms by depriving them of moisture. The eucalyptus tree stops the malaria by driving off the *Anopheles*. It would be interesting to know if the fever would return as soon as the trees were cut down, and more especially if young *Anopheles*, raised in the laboratory and free from infection, were turned loose there. As I remarked before this modification explains how uninhabited districts still may remain malarious, and this the unmodified theory does not do. It explains how the fever is disseminated without direct reinoculation; for this would imply either very active work on the part of the infected mosquitoes which have lived through the winter, and which must be comparatively few in number, or a very large number of cases of dormant malaria, from which the young mosquitoes could obtain the parasites. Whereas the writer realizes the large number of these cases, he does not believe them sufficient to alone restock the *Anopheles* with plasmodia. It likewise must not be forgotten that most of these dormant cases seem to develop in early spring, when there are no *Anopheles* to be infected, and that they readily respond to treatment, which would destroy the parasites before the *Anopheles* would have a chance to obtain them.

The original experiments by Bignami simply showed that *Anopheles* taken from a malarious district could produce the fever in a healthy man by biting him, although his later experiments showed that they could directly transfer the parasites from one person to another. Consequently many of his experiments speak as strongly for the modification as they do for the theory, for the mosquitoes might have obtained their organisms from sources other than human blood.

There are two objections to this modification of the mosquito theory. The first is that the malarial organisms have never been cultured artificially. To this we can reply that no other parasitic protozoon has been thus cultured, and that we must not demand more in one case than in the others. The second is that they have never been found free in nature. We must consider in regard to this point how very minute are the tiny thread-like organisms found in the mosquitoes' parotid glands and how easily they could escape observation when looked for in water, let us say, and that up to the present year they would not have been considered in connection with the *plasmodium malariae*, even if found, and might readily have passed for bacteria. Experiments made with the organism as found in the human blood will have to be cast aside as proving nothing, and every experiment in regard to the extracorporeal life of the plasmodium will have to be tried with it in this thread-like stage, for it is from this stage that it passes into the external world, if it does so at all.

A positive proof of what I have just read cannot as yet be shown, and further investigation may overthrow it. Nevertheless I claim that this modification of the mosquito theory comes nearer fulfilling all conditions and answering all objections than any theory that has come under my notice. Like all hypotheses, for it is nothing else, it needs further investigation, which will either strengthen or overthrow it. Still it is at least worthy of consideration, and as such I pre-

sent it to you, hoping that it will be criticised fully and severely, for if it will not stand criticism, it had much better never go beyond the doors of this hall.

HEAT-STROKE AS A POST-OPERATIVE COMPLICATION.[1]

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The atmospheric conditions that occasionally prevail during the summer season in New York determine not infrequently conditions known as sunstroke and heat-stroke. The occurrence of these phenomena seems to be the result of a combination of high temperature, a high percentage of humidity and absence of breeze. The humidity is perhaps the most essential feature and certainly determines the greatest amount of depression and suffering even when the thermometer fails to register extreme degrees of heat. When the combined elements are most marked, we have in this city a climate which is badly borne even by those accustomed to live in countries where the range of the thermometer during the heated term is considerably higher than here.

All accustomed to treat the very sick realize perfectly the severe depression produced in patients by hot weather. For the past seven summers the writer has had abundant opportunities to observe these effects of heat in an active hospital practice. He believes that one ought to realize that this depressing humid weather furnishes a real complication in many cases and in some constitutes a condition of major importance directly dangerous to life.

In ascribing to the effects of heat a decided rise of temperature and definite constitutional symptoms, we must, particularly when dealing with post-operative conditions, be able to eliminate entirely the many causes that may determine a post-operative fever. Such a standard makes it very hard to reduce a description of a given case to exact language, and get to prove one's views to others, no matter how sincere one's personal impression may be. Shock, sepsis, suppuration, hemorrhage, neurotic conditions, constipation, malaria, constitutional dyscrasiæ, evident or latent, iodoform-poisoning, genito-urinary infections and reflexes, renal and many other conditions must be eliminated before one can fall back upon heat as the sole determining cause of this condition of fever and constitutional manifestations which, if sufficiently marked, the writer would describe as post-operative heat-stroke.

The writer has in mind a number of cases which he believes might come under the head of heat-stroke, but, mindful of the desirability of restricting the term to sharply-defined cases, he will confine himself to the report of two in which conflicting evidence seems to be absent.

[1] Read before the Surgical Section of the New York Academy of Medicine, November 12, 1900.

Case I.—Walter O. C., aged eight years, admitted to St. Luke's Hospital June 1, 1900, with a history of appendicular trouble of short duration. The previous history excellent. Physical examination negative except for local condition. There is a moderate general abdominal rigidity, most marked on the right side. There is a point of extreme tenderness just above and internal to McBurney's point. No mass can be felt. Temperature 102° F. Pulse 120. Immediate operation under gas and ether anesthesia. An incision along the border of the right rectus revealed a long and in part gangrenous appendix; no abscess. Removal of appendix; gauze packing; closure of the greater part of wound. The immediate recovery was good, but by the afternoon of the next day the boy presented a chain of symptoms which gave the impression that he would die in a few hours. The temperature was 104° F., pulse 148 and of wretched quality. The countenance was pinched and of an appalling ashy, gray-blue color, the skin was hot and dry. He was irrational and could not be kept still in bed. Changing of the dressings showed a perfect condition of the wound. During the course of the afternoon the condition was intensified, and the patient became wildly delirious. The house surgeon, Dr. W. P. Herrick, was fortunately inspired with an effort at a reduction of temperature by an alcohol sponge-bath and the application of ice bags to various parts of the body. The working of these measures was almost miraculous. The delirium ceased instantly, the child passing into a natural refreshing sleep of some hours, awaking in a perfectly normal condition, and the temperature dropped from 104° to 100.6° F.; the pulse fell to 98 and was of excellent quality. June 2, 1900, was an especially depressing day, although the heat did not reach some of the extremes attained later during this very hot summer, and the close and distressing quality of the air had been specially noted in the particular ward in which the patient lay. The child's further convalescence was perfectly normal.

In the case just described there was absolutely nothing but the heat to account for the symptoms; the result of treatment was promptly manifested, and the uneventful after-history showed that it was the only complication present.

The next case presents quite different elements, as there was a very grave condition giving rise *per se* to a high temperature, but its extreme degree leads the writer to believe that the heat element was an additional and definite factor.

Case II.—Mr. Charles Van E., admitted to St. Luke's Hospital August 10, 1900, with a history of appendicular trouble of a week's duration. In his previous history it is noted that he never had had malaria. Examination showed an enormously obese man, weighing over 300 pounds, somewhat cyanotic. Heart-action feeble and intermittent. Abdominal palpation negative. Temperature, 104.4° F., pulse 108. Immediate

operation. A seven-inch incision was necessary to reach the peritoneum. A huge abscess cavity was opened and the gangrenous appendix was removed; through its lumen magnesium sulphate ℥ ij, in concentrated solution, was introduced into the bowel and the stump inverted into the cecum. Liberal packing of cavity. Partial suture of wound.

An hour and a half after his return to the ward the temperature (verified by several thermometers) was 108.2° F. When this temperature was reported the writer assumed that this excessive temperature must be due to heat-prostration and instituted treatment on this line, *viz.*, rubbing with ice, ice-coil to the abdomen and head, etc., with the result that the temperature was brought down in three hours to 102.8° F., a drop of five and four-tenths degrees. For the next twenty-four hours it ranged from 102.4° to 104° F., dropping below 101° F. the second day after operation. Meanwhile the antithermal treatment had been vigorously continued. He made a poor convalescence, as his heart constantly flagged. He died rather suddenly two weeks after operation. Autopsy showed the cardiac condition alone to be responsible for the fatal result.

The writer believes that the immediate hyperpyrexia in this case may be attributed to the following facts: The patient traveled by railroad in the greatest heat of the day to reach the hospital. He was etherized in a small, close room without any window opening externally. The main operating-room being in use, the operation was performed in an auxiliary room with only one ordinary window in it, and that facing north while the prevailing breeze that day was from the south. At the time of the operation the Weather Bureau thermometer, high above the street level, registered 94° F. and the humidity was so distressing that all participants in the operation were dripping with perspiration. The day is remembered in the hospital as probably the most trying of the whole summer.

After opening this huge abscess (about two quarts of pus were evacuated) the patient should have had a drop in temperature rather than a rise. That we were able purely by the application of cold to effect a drop of five and four-tenths degrees in a short time seems to the writer, taking in consideration the etiological factors just stated, fairly good evidence of the correctness of the views here maintained.

On the Fourth of July, 1899, the writer operated on a young man with a small, well-localized appendicular abscess; the appendix was easily removed, and the cavity well drained with gauze. Three days later, after having done quite well, the patient became delirious and finally maniacal. The skin was hot and dry, the pulse-rate reached 176 and the temperature 105° F. Application of cold quickly brought down the temperature over four degrees, and the pulse to 122. The patient died, however, the next day apparently of exhaustion. There was no post-mortem, but the condition found at operation and the abdominal symptoms, or rather lack of them, did not give a sufficient explanation of the cause of death. As the weather was particularly sultry, this may have been a case of heat-prostration, but it is not offered on the same footing as the cases just related.

If the writer is correct in his belief that there is an occasional reaction to the atmospheric conditions in operative cases, it is certainly important to recognize it in order that it may be properly and promptly treated (there is no question in my mind that in the cases cited the treatment saved the lives of the patients, as they were both rapidly sinking); (2) for the surgeon's peace of mind, and (3) to avoid misdirected efforts at the relief of conditions which may be mistaken for these effects of heat.

With regard to the treatment, little need to be said except to recommend free circulation of air (electric fan), free diuresis, and the application of cold in various forms, the extent to which it is resorted varying with the urgency of the symptoms and the exigencies of the surgical condition. Probably none of these heat manifestations will ever be of a very severe type, and comparatively mild measures should succeed. The prognosis should be good, provided treatment is promptly instituted.

It is not the writer's desire to convey the impression that because of occasional manifestations, as just described, the summer season is relatively less favorable for operative work. On the whole, patients perhaps do better, as they are more free from pneumonic disturbances, the increased action of the skin supplements the efforts of damaged kidneys, and the prevailing temperature assists in maintaining a good circulation. It is only necessary to bear in mind that occasionally the beneficial effects of heat may become misdirected, if complicated with unfavorable accompanying atmospheric conditions.

CHLORALAMID.

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NORMAL sleep occurs during the harmonious working of bodily organs. Sleeping and waking states are rhythmic life phenomena and part of the evidence that action and reaction are always equal and opposite. Further, sleep is an assimilatory process by which energy is stored for expenditure during waking hours. Therefore anything that disturbs the harmonious working of bodily organs interferes with sleep. The foregoing may sound trite or like a mere statement of fact, but when we attempt comprehensive definitions and secure axioms we too often neglect them in considering related matters.

Treatment of sleeplessness must vary therefore as widely as the nature of the disturbance of

whatever particular bodily organ is involved. If the head is too full of blood to permit sleep, resort may be had to a hot foot-bath, a laxative or other derivative means; if sleep is absent because the heart is weak, its stimulation is indicated; if sleeplessness ensues through poisonous materials retained in the circulation, proper elimination is imperative. To any one with a rudimentary knowledge of physiology such things should be apparent enough, but in spite of the dissemination of that amount of information single remedies are still expected for complex ailments such as insomnia.

Germain See's division of causes of sleeplessness are into dolorous, digestive, cardiac, respiratory, cerebrospinal, neurotic, psychic, insomnia of fatigue, genito-urinary and toxic. Reflection exposes the unsatisfactory nature of such a division, for conditions are named that could be included one in the other, and the organs mentioned are too few, while in such names as neurotic, psychic and cerebrospinal we may have identical states. Bradbury[1] classifies the causes of insomnia into irritative, toxic, psychical, change of mode of life. The first division may be made to include all the other divisions, the second may cause the third and the fourth suffice to set up any of the others.

Irritation might be assigned as nearer the root of insomnia than probably could be summed up in any other word, but what causes the irritation should be sought for and removed if possible. As it is not always practicable to find the source of this irritation we are forced to regard, in many cases, the fact that the nervous system is the avenue of irritability and attempt relief through neurotic medicines.

The claim that sleep depends upon a retraction of neurons, a drawing away of nerve-processes from one another, is not only incapable of proof but as fantastic as that skeletons may walk. In 1882[2] I anticipated the neuron theory to the extent of assigning axis cylinder producing functions to the nerve-cells, but expressly derided autonomy of nerve-tissue. The narrow specialist in neurology seems to regard the nervous system as capable of existence apart from the body.

Something nearer ultimate causes of sleep and its disturbances can be secured by considering the blood-supply states upon which they depend. I advanced a theory of sleep[3] based upon vascular changes, claiming that the whole range of sleep phenomena is accounted for in states of the blood-vessels and their contents, quantity and quality of blood and caliber differences of arterioles. What would suffice to cause sleeplessness in one person would not do so in another, and the same individual will be affected differently at times by similar causes. Mental suggestion may suffice to produce sleep in a few instances, but fails in serious cases. Humboldt is said to have required but two hours' sleep, Pitt three, Hunter five in the twenty-four. But other noted persons were not thus abnormal.

Among promotors of normal sleep may be enumerated fatigue, repletion, removal of irritation, such as disturbing temperature (remembering also that toleration of what previously irritated may be acquired, such as adjustment to noises), silence, darkness, fresh air during the previous waking hours, massage, restoration of proper circulation as by a hot bath or warmth to feet, a narrow strip of mustard plaster to the spine, a cup of hot beef-tea or of hot water, local friction between the shoulders or over the abdomen, an enema of hot water, not for its cleansing action but to impart interior heat, although in states of faulty elimination catharsis, laxatives, diuretics or diaphoretics may cause sleep. Tonics are needed or perhaps a heart stimulant in states of low arterial tension. Such are indicated by wakefulness in recumbent positions and drowsiness while erect or sitting.

While fatigue may cause sleep, excessive fatigue may destroy it and become an irritative cause of wakefulness. Irritative insomnia may be due to excessive fatigue, abnormal temperature, respiratory difficulty from organic or chemical causes, such as insufficiency of oxygen, excess of carbonic acid or other toxic material, other organs such as stomach, liver, intestines, ovaries, etc., may be deranged, as when hunger or pain is felt, or there may be sensory irritation as by noises, light, etc., cerebral congestion, circulatory derangement, as in inflammation, tumors, and in the delirium of fever or apprehension of heart-disease. Sleep may be banished by improper use of coffee or tea. Excitement such as joy or grief may destroy sleep. Pain anywhere is a frequent and potent cause of sleeplessness.

Abuse of hypnotics is frequent, as in the case of an old gentleman whose customary whisky was cut off by his physician and who lost the use of his legs and "had not slept for a week," although large doses of chloral and bromides had been given. The overdosing had caused both the "paralysis" and the sleeplessness and irritated the stomach so that food could not be taken. My advice was to stop the depressing drugs and take an egg-nog, which caused refreshing sleep in a few minutes and cured the "paralysis."

In many cases time is required to remove a discovered cause of sleeplessness and meanwhile sleep is imperative for the sufferer. In the greatest number of such and other instances there is no medicine that can equal chloralamid in efficacy. In nocturnal epilepsy and particularly where there is apprehension of somnambulism I found that chloralamid suppressed attacks. Dana[5] found it to be a useful adjuvant in epilepsy.

Where repeated doses of a sleeping-potion are to be administered I have found during the past ten years that chloralamid is without a rival, as it does not depress the heart or irritate the stomach as do bromides and chloral hydrate, nor paralyze the intestines and stupefy the next day as do sulfonal and trional. In ordinary melan-

cholia it acts as a food and I therefore classed it among "nutrient hypnotics" or those that supply some material to the system that sustains instead of depresses. In this sense milk, beef-tea or a stimulant, is a nutrient which may upon suitable occasions produce sleep. In agitated melancholia with refusal of food I gave the solution mixed with the liquids for enforced feeding and have noted in most cases a disposition to take food thereafter. In toxemic neuroses and psychoses, in which other hypnotics or analgesics added to the trouble by giving more poison to the system and interfering with elimination, chloralamid has appeared to antagonize the polluted blood-stream, strengthen the heart and bowels, and clear up the intelligence. During the formation of alveolar abscesses both the pain and sleeplessness have been greatly abated by chloralamid, and inveterate neuralgias have been made far more tolerable by occasional doses when sleep was disturbed. The distressing wakefulness of traumatic neurasthenias, especially when the spinal column had been injured or was involved in inflammatory states, has been relieved, and in locomotor ataxia I prefer chloralamid, in conjunction with derivative means, to any other medicament when there is nocturnal pain. In this disorder opium should never be given and many of the other usually suggested hypnotics will be found to be worse than inoperative. In the occasional restlessness of chronic insanities, in the sufferings of meningitis, and when senile heart conditions or, in fact, cardiac troubles in general suggest extreme care in the selection of a hypnotic, chloralamid has no rival. It acted rapidly and satisfactorily in breaking up the cocaine habit, and a drunkard who used it stated that a few doses deprived him of his appetite for liquor (how long I did not learn), nor was there any disposition to take further doses afterward. Too many alleged "cures" of addictions merely substitute one pernicious habit for another. Charteris[6] and Ledingham[7] favor its use with bromides to prevent seasickness. Keay,[8] Strahan[9] and Umfenbach[10] advise its use in mental diseases. Manchot[11] suggests it in diabetes. A large number of competent clinicians have endorsed chloralamid favorably.[12] Hagan and Hüfler observed good effects upon sleep even when sleeplessness was due to severe pains, being in some cases even superior to morphine, and Collins mentions its usefulness where any pain prevents sleep. Where there is excessive irritable activity of the brain it has given relief. In a case of sleeplessness from arterial sclerosis chloralamid relieved when morphine failed to do so. E. Friend found it better than morphine in the distress of gonorrheal rheumatism. Pain and consequent sleeplessness in thoracic aneurism were relieved when morphine failed, and Reichmann used chloralamid in gall-stone pain in preference to morphine. In various neuralgias and carcinomatous suffering, in the pain of floating kidney, herpes zoster, alcoholic neuritis, dysmenorrhea, etc., chloralamid was proven to be superior to morphine. In Bright's disease, where sleep had been seriously disturbed by almost constant headache which various remedies failed to remove, chloralamid was beneficially used and in the sleeplessness of phthisis it was noticed that the exhausting night-sweats were lessened. It relieved the severe headache of contracted kidney. Some writers mention its soothing influence upon mental disorders.

Manchot in the Hamburg Lunatic Asylum used more than a pound of chloralamid monthly for forty months in doses of 112 to 180 grains daily, mainly in delirium tremens and chronic alcoholic cases. His mortality during this time fell from 6 in 160 to 5 in 519 uncomplicated delirium tremens cases.

A few instances of undesirable after-effects have been stated as occurring after using chloralamid, *viz.*, headache, stupor, giddiness, exhilaration, intoxication, nausea, incoordination, slight pain, dryness of throat, stomachache, epistaxis, measles like exanthem, and sugar in the urine as an idiosyncrasy, but not constant in all cases, and in only one-third of the cases where large doses were used. These accompaniments are in so few instances as to suggest coincidence rather than cause. I observed exhilaration and slight incoordination, however, in a cocaine case, and to a less extent in alcoholism the day after chloralamid had been used, but these were of no consequence compared with the benefits secured.

Alt found it of little use in the excitement of mania or paretic dementia; I recorded, in the 1894 article referred to above, that the drug appeared to answer best in the depressed psychoses and did not seem to be strong enough for mania. This I attributed to its stimulant influence, needed in melancholia to induce sleep, but superfluous in mania, although sustentation is imperative in both conditions.

It is to be noted that inferior whisky is not a rapid solvent and it is recommended to dissolve the crystals in a little pure alcohol and then add water or whatever is preferred. The elixir is therefore a prompt means of exhibition where time is a consideration.

Pharmacists keep a ready made elixir in stock with the following composition containing 30 grains to the fluid-ounce: Chloralamid, 2 grams; alcohol, 5.0 c.c.; tincture arom., 5.4 c.c.; glycerin, 15.0 c.c.; water q. s. ad. 30.0 c.c.

Chloralum-formamidatum, the chemical name, which pharmacy requirements shorten into chloralamid, is constructed by the interaction of chloral (not chloral hydrate) and formamide. It dates from the experiments of Von Mering, the Strasburg clinician in 1889, and has grown into universal esteem. The Pharmacopœias of all other nations will assuredly follow the German in recognizing its value. The formamide is a stimulant which counteracts the blood-pressure fall of chloral and, according to Reichmann's sphygmographic tests, chloralamid influences

blood-pressure but little. Nor is there unfavorable action upon the temperature, respiration, circulation or digestion.

It is decomposed by alkalies and heat and in water at 140° F. (60° C.), hence it should never be given in hot water as has been improperly done at times. Twenty parts of water at ordinary temperature are said to dissolve the crystals, but I have found that 30 to 40 parts of water save much time in making the solution; weak acids facilitate its dissolving and one and a half parts of alcohol rapidly unite with it; therefore, about three parts of brandy or whisky, if standard, will also do so. Taken in powder the effect is delayed, though some practitioners persist in this form of dosing. With stomach acidity there would be more rapid assimilation. Claret is used occasionally, but in all instances where vinous or watery vehicles are solvents and time is to be saved a concentrated alcoholic or elixir dose should be poured into the vehicle.

Its slightly bitter taste is scarcely worth consideration, but to disguise it an approved formula is:

℞ Chloralamid ..... ʒ ij
Whisky ..... ʒ j
Syrup raspberry ..... ʒ j
M. Sig. Half-teaspoonful dose.

Lettow's prescription for an enema is:

℞ Chloralamid ..... gr. 45
Muriatic acid ..... gtt. 2
Alcohol ..... ♏ 15
Water ..... ʒ iij

A solution made with 12 grains in two and a half drams of water may be used hypodermatically when such disorders as rectal carcinoma deprive a patient of sleep.

The usual dose of chloralamid is 15 to 60 grains one half-hour before bedtime. It takes effect usually in one hour. One dose has sufficed to secure sleep on a subsequent night as well as upon the night when used. The German Pharmacopœia mentions 60 grains as the largest single dose and 120 grains as the largest daily dose.

There is no liability to addiction, no ill consequences, no cumulative effect, and as it does not influence the viscera and is not an irritant to any mucous membrane it should more rapidly supersede chloral hydrate, as it is gradually and surely doing.

The relative strength is assumed to be 45 grains of chloralamid equaling 30 grains of chloral hydrate, but in practice the doses are about the same with the advantage that while a minimum dose of chloral hydrate has killed, no amount of chloralamid has been attended with fatal result so far as reported. The blandness and safety of chloralamid without after-effects should certainly recommend it against the danger and harshness of chloral hydrate which destroys digestion by setting up gastritis, and its constant administration has cut off chances of recovery from insanity. I believe that insane asylums should in the name of humanity use chloralamid in preference to chloral hydrate. In organic heart-disease chloralamid is safer and there is less danger and dread in giving it where there is any cardiac complication. Cervello claims that chloral injuriously affected the heart and that it created a difference from normal blood-pressure of from 50 to 80 mm., while chloralamid differed within the limits occurring during ordinary sleep 17 mm., so chloralamid, he infers, influences the heart but slightly.

Phenacetin, phenocoll, lactophenin and antipyrin are well known minor pain alleviators which incidentally and indirectly may cause sleep, but against each of these have been charges of their causing heart interference and cyanosis. Acetanilid of this series was regarded as the worst in this respect and antifebrin was presumed to be only a proprietary form of the former. Certainly pseudoscientific "headache-powders," extensively advertised, have here and there occasioned death; this has been laid to commercial impurities in the acetanilid. Reputable physicians are afraid to make too common use of such things, but the nostrum advertiser has neither fears nor scruples, an instance of ignorance and cupidity rushing in where knowledge fears to tread.

Conium maculatum was a favorite motor paralyzant in maniacal states, but is too dangerous for extensive use. Ergot is probably not used enough as an arteriole constringent where congestions produce pain or sleeplessness. Bromides are being dispensed more and to a reckless extent when their protracted use causes debility and poverty of blood. Cocaine is being abused in quack preparations, such as wines and catarrh snuffs. Both amylene hydrate and paraldehyde have suffocating odors and the latter has increased the number of epileptic fits. Hypnone, somnal and urethane have been practically discarded through unfavorable reports. The feebleness and unreliability of lactucarium shelves it as a curiosity more than a medicine.

Ernest Schultze[13] discusses the new mixture of chloral hydrate and amylene hydrate called Dormiol. It has a pungent menthol odor and burning taste. "Owing to its peculiar behavior in water" a ten-per-cent. solution in water is recommended for use. He says it failed in mania and paretic dementia and in the excitement of epilepsy. As the disagreeable properties of its components are not only retained by this new mixture and new ones added, while efficiency is lessened, its justification may well be questioned.

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STATE SANATORIA FOR CONSUMPTIVES IN MICHIGAN.[1]

By HERBERT MAXON KING, M.D.,
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QUOTING from a paper on the "Home Treatment of Consumption," read before the Medical and Chirurgical Faculty of Maryland last fall, Dr. Osler says: "For more than two centuries the clearer headed members of the profession have known that an open-air life sometimes cures a case of phthisis"; and, concluding, he says: "A rigid régime, a life of rules and regulations, a dominant will on the part of the doctor, willing obedience on the part of the patient and friends —these, with the conditions we have discussed, are necessary in the successful treatment of pulmonary tuberculosis." The "conditions discussed" are those toward which the efforts of every intelligent and experienced practitioner of medicine are directed in his management of the consumptive patient, whether in private or hospital practice.

It is unnecessary at this time to enter into any detailed description along the lines of the "open-air" treatment, the rigid discipline necessary in carrying it out successfully, or the supplementary medical treatment best to be employed. Suffice it to say that at the present time, all physicians of experience in the care of consumptives agree that the cure of the disease is the work of Nature; and that the chief function of the physician is that of a teacher, while his peculiar medical skill is devoted to the task of promoting nutrition and placing the economy in the most favorable condition to receive the benefits of the rational cure. Moreover, all are agreed that to be most successful treatment must be begun in the incipient stages of the disease, the so-called "pretubercular" stage which, as Dr. Trudeau and others have long maintained, is nothing in the world but the first stages of the tuberculous process before physical signs have appeared. Furthermore, that to effect a cure which will give the greatest security against relapse in this treacherous disease, treatment must be perseveringly continued, with untiring vigor, over a considerable period of time.

Upon these three points, then, there is such a unanimity of opinion that argument or citation of statistics are alike superfluous: (1) The "open-air" treatment systematically carried out, supplemented by such general medical treatment as the individual case may require is, up to the present, our most effective weapon against tuberculosis; (2) early diagnosis is essential to the best results, and (3) treatment to meet the highest requirements must extend over a considerable period of time.

When a patient is discovered in the early stages of tuberculosis, the question at once arises how best to fulfil these three conditions. When such a patient is from the wealthier class, or even from the less wealthy but well-to-do portion of the community, the chief difficulties which otherwise arise to embarrass the physician are at once overcome. A trained and specially instructed nurse, the Adirondacks, North or South Carolina, Colorado or California, settle the question; it is only the matter of details that demands further attention. But when the same disease appears in the family of the laboring-man, a class from which 90 to 95 per cent. of our consumptives come, most often attacking the bread-winner, the problem which confronts the physician is by no means as simple. Change from the environment in which the disease has developed is the first essential, and this, in most cases, means the cutting off of self-support. This compels the patient to assume, for an indefinite period, the rôle of a dependant at a time when it is not easy to convince either him or his friends that the trouble is of sufficient gravity to demand such radical measures. A trained attendant and travel or residence in a suitable climate under such conditions as best favor a cure are alike out of the question. The patient is seen for a few minutes perhaps once or twice a week and instructed in a vague sort of way in the care of the sputum, the desirability of a life out-of-doors, and such further hygienic and sanitary precautions as occur to the physician's mind at the time. Tonics are prescribed and a diet indicated, but all without any assurance that the importance of the situation is appreciated or that the directions will be followed as intended; in short, without that system and discipline which experience has for a century been teaching us are of such inestimable advantage in the treatment of consumption.

Institutional care for this appallingly large class of unfortunates is to-day recognized as the closest approach to the ideal treatment which modern social conditions make possible. Sanatoria for the treatment of the early stages of phthisis are no longer experiments. Wherever they have been established, whether by private endowment or State appropriation, they have more than met the most sanguine expectations of their supporters, yet the surprising fact remains that the vast majority of people, notwithstanding that one out of every forty or fifty of them is a consumptive, is supinely indifferent to the whole matter. However, perhaps this indifference is more apparent than real. I am convinced that once the medical profession expresses that unanimity of opinion which must follow a fair consideration of what has already been accomplished in this direction, there will be no further difficulty in securing the attention and interest of both legislature and people.

The pioneer efforts of Brehmer in Europe and Trudeau in this country have demonstrated beyond cavil the immense practical value of the sanatorium idea, not only as a means of curing the disease, but through its educational influence upon the community, both directly and through

[1] Part of the general discussion on the subject of Tuberculosis at the thirty-fifth annual meeting of the Michigan State Medical Society, at Mackinac Island, 1900.

the missionary work of cured and improved patients on their return to the work-a-day world, as an active preventative against the spread of tuberculosis.

There is already throughout the country a considerable agitation on the subject of State sanatoria. New York has recently appropriated the sum of fifty thousand dollars for the establishment of a sanatorium for incipient consumptives in the Adirondacks. Of course, this sum is absurdly small and can in itself effect very little, but it is a beginning in the right direction, and will no doubt be followed by more substantial appropriations in the near future.

In 1895 Massachusetts appropriated the sum of one hundred and fifty thousand dollars for the same object, and the State Hospital in Rutland is the result, a splendid institution of which the State may be justly proud. I am informed by Dr. Marclay, the superintendent in charge, that the plant as it now stands, with a full capacity of one hundred and seventy-five patients, cost the State about one hundred and seventy-five thousand dollars. As far as can be judged at present its first year's work ranks well up toward that which is yearly accomplished by Dr. Trudeau's Adirondack Cottage Sanitarium.

When once the current of public opinion sets in a certain direction it gathers force with every month and year, and while this question of State care of consumptives has been a long time gaining the force of public confidence, recent developments along the lines of the etiology and pathology of tuberculosis have produced their inevitable influence, and the medical sentiment to-day is so strong in favor of that which I advocate in this discussion that it is only a question of time, I am convinced when State sanatoria will be regarded as much an essential to the public welfare as is the school-house.

Without entering further into the general consideration of a subject so inexhaustible, let me briefly capitulate the points of chief importance to the condition of things respecting tuberculosis which confronts the Michigan practitioner to-day. As nearly as I can estimate from the statistics furnished by the State Board of Health and such information as I have obtained through the courtesy of its Secretary, Dr. Baker, there are in Michigan in the neighborhood of 1500 deaths per year from consumption. Probably this figure is too low by 10 per cent. to express the total number of deaths from all forms of tuberculosis. But allowing the number to be 1500, that would express perhaps three fourths of the number of new cases which develop each year within the state. If my estimate is correct, therefore, we have to consider: (1) That there develop in Michigan every year 2000 cases of tuberculosis. Of this number 10 per cent. are in such financial circumstances as to exclude them from present consideration. An additional 20 per cent. may be safely estimated to be unfit for sanatorium treatment by reason of the hopeless virulence of their disease, peculiar complications, or too long delayed diagnosis of their condition. Another 10 per cent. at least will leave the state for one cause or another. (2) This leaves us to consider that there are in Michigan about 1200 new cases of tuberculosis every year which are suitable for sanatorium treatment, and which under present conditions must be treated at their homes or at least within the state.

In the Massachusetts institution at Rutland the average stay at the hospital of those cases classed under "arrested" and "much improved" for the year ending October 1, 1899, was four months (see Third Annual Report of the Massachusetts Hospital for Consumptives, etc.). This, however, is too short a time for the attainment of the best results. In Dr. Trudeau's fifteen years' experience at the Adirondack Sanitarium, his best results were attained with an average stay of eight and three-quarter months ("Sanitarium Treatment of Incipient Pulmonary Tuberculosis and its Results," Medical News, June 2, 1900). In a state institution it would for obvious reasons be impossible to average so long a stay, even for the most favorable cases, and six months would be a generous estimate, while the unfavorable cases would be discharged very much sooner, as soon, indeed, as a fair trial had proved the futility of treatment. We have then to consider: (3) That sanatoria in Michigan with a combined capacity for 500 patients would fulfil our present requirements in this direction, allowing an average stay of four months to each patient.

As to cost. It has not been found practicable, either in Europe or in this country, to treat this class of patients in groups of more than 200. In Germany there are no institutions with a capacity greater than that, while, as before stated, the Massachusetts Hospital at Rutland has a maximum capacity of 175, and when recently there was a movement on foot to enlarge the buildings for the purpose of accommodating a larger number of patients, Dr. Bowditch and his associates strenuously opposed such a measure for reasons admittedly sound. It would, therefore, require three separate plants to fully meet the demand in Michigan. It would not, however, be necessary at first to ask for appropriation for more than one, since such innovations require practical demonstration of their usefulness to convince the people in general and the patients in particular that they do what is claimed for them. I judge that, with the advantage of the experience of Massachusetts and New York, we in Michigan might build and equip institutions which would be models of their kind, at a cost of $150,000 each. Then would follow the expense of maintaining them. Here again we may turn to the object lesson in Massachusetts. Dr. Marclay informs me that with full capacity the per capita expense of running that institution is $8.40 per week. Of this the patients pay a uniform rate of $4.00 per week, which leaves it necessary for the state to appropriate the balance. This plan of relieving such institutions from the

odium attaching to a purely "charity hospital" and the state from just so much expense, I should most certainly advocate, except that some provision should be made for allowing favorable cases to remain as long as necessary to effect most permanent results, even if they should be unable to continue paying the nominal rate charged.

In this connection Dr. Trudeau, whose long and successful experience adds weight to his advice, writes me as follows: "It seems to me that if you could get an appropriation of $8.00 per week for each patient, with care it might be run on that basis. From my experience I would say that the whole success of the thing will depend on two things; first of all, the class of patients you admit, and the obtaining of incipient cases is surrounded with difficulty. Secondly, the manner in which the institution is run and controlled, and the site which it occupies." And it seems to me that right there is the gist of the whole expense question. If we can be assured of a good management and can keep our proposed sanatoria free from "pot-house" politics we can promise the state that the necessary appropriations, after the initial cost of construction and equipment is met, will be comparatively insignificant.

Before concluding let me for a moment point out the feasibility of the establishment of state sanatoria for consumptives in Michigan.

First, as to the mooted question of climatic influence in tuberculosis. That Michigan does not furnish the most salubrious climate in the world, I will not deny; indeed, I am ready to agree that, all other conditions being identical, a consumptive might do better in any one of several other localities; but I also contend that the chief advantage thus derived would lie in the greater number of hours of sunshine to be enjoyed out of doors and not in the high altitude and rarefied air. The elevation of the Massachusetts Hospital at Rutland is 1200 feet above sea level. This is obtainable in many Michigan localities. Hillsdale County, for instance, the highest elevation south of the Grand Saginaw valley, is about 1200 feet. The Adirondack Cottage Sanitarium is situated at an elevation of about 1600 feet. This height can be obtained in Michigan in the northern portion of the southern peninsula, notably in Antrim and Otsego Counties, where a gently-rolling, well-wooded and magnificently-watered plateau reaches in several culminating rises an elevation of nearly 1800 feet above sea level. Moreover, other climatic conditions obtainable in Michigan are at least equal in healthfulness to those at Rutland and not much inferior, heretical as it may seem, to the Adirondack region. I think it safe to say that in properly managed sanatoria, suitably located, and officered by men selected for their professional ability alone, irrespective of political considerations, we might expect fully as large percentages of "apparently cured," "disease arrested" and "much improved" in Michigan as are reported from any institution of the kind in the world.

In any event, we must remember that the class of patients which we are considering must of necessity be treated and cared for in Michigan, whatever may be the disadvantages of its climate. And admitting that the "open-air sanatorium treatment" not only offers to these patients the best chances for recovery, but is a most potent factor in preventing the spread of the disease. That such institutions as are asked for, with their maintenance, are reasonably within the financial competency of the state, I think we must all agree; also that the establishment of such institutions would be a perfectly feasible measure and one which if adopted would yield amply satisfactory returns to the people of the state.

At first I would advocate the securing of an appropriation for but one plant, to be situated in a locality reasonably accessible to the larger cities of Michigan, such locality to be selected for its peculiar fitness for the purposes intended, by a commission also selected for the special fitness of its members for the work intrusted to it.

Such an institution should, in my opinion, be officered by a "visiting staff" of not more than four physicians, who should be appointed by reason of their professional experience and ability, who should have quarterly terms of service, without remuneration, and who should govern not only the treatment of the patients but the selection of suitable cases for the sanatorium and have immediate supervision of the "resident staff" which should, of course, be salaried.

This subject is one which can receive but a very small part of the attention which its importance merits in any limited discussion, but it is one which we certainly owe it to ourselves and to the community in which we live to give our most thorough consideration. And to that end I shall at the proper time offer a resolution at this meeting of our Society for the appointment of a special committee whose duty it shall be to bring the matter properly before our next legislature.

I am aware that the subject has before been exploited at previous meetings of our legislature, but never before with so much to offer in demonstration of its importance or the success which has attended recent movements of the sort in other states, and in the present case I am sure that the voice of the sentiment of this Society is that of one man; and if I am right in so thinking the eventual realization of the idea is certain.

A STUDY OF DRAINAGE.

By A. M. POND, M.D.,
of Webster City, Iowa.

I purpose to show in this paper that drainage, so far from being the necessity it was once believed, is of value in comparatively few cases, and in others is a positive detriment. Before passing to a direct discussion of the topic, however, I wish to consider some features of the

pathology of the blood and wounds in general.

In wounds with an external solution of continuity an abundance of blood serum is deposited immediately upon injury in and about the injured surface. This serum is of itself an antiseptic, inasmuch as it agglutinates apposing tissue and by so doing resists invasion of foreign and toxic elements that would endanger the function of repair.

Fortunately this serum is insoluble except in a weak solution of salt and water, so that repeated washings do not deprive the injured tissues of their protection without which suppuration would be the invariable result. I believe that the medical world now is unanimous in asserting that any wound, free of infection, heals spontaneously without any of the elements of inflammation and especially without pus.

This brings us to a consideration of the process known as chemotaxis, the faculty possessed by all motile bacteria of moving toward or away from certain substances according as those substances attract or repel them. This motility is also possessed by leucocytes and other plasmodiæ. Bacteria move toward any material that furnishes them nutriment, hence bacteria have an affinity for leucocytes and leucocytes an equal affinity for bacteria. The leucocyte acts the rôle of a natural scavenger and responds promptly to chemotactic attraction upon introduction of foreign, dead or offending material, by enveloping or appropriating such substance and removing it. Thus bacteria and leucocytes being mutually attractive, although the function of one is to destroy while the office of the other is to preserve, are forces arrayed against each other, and it is simply a question of resistance and physical perfection whether an injury is protected by leucocytes and goes on to complete repair without interruption, or suffers loss and delay by the energetic attempt of the bacteria.

Blood-serum consists of proteid material, which in suppuration first attracts the bacteria, and leucocytes, which oppose them. The pus is composed of leucocytes which have perished in the struggle.

Of the class of injuries in which there is no solution of continuity, such as abscesses, intra-abdominal and others, the process of repair is the same as that above described, infection taking place from invasion of bacteria through the colon, uterus, tubes, tonsils, lymphoid structures and other recognized avenues.

It is apparent that one seldom if ever sees infection about a simple fracture, because its location is removed from any avenue of entrance for bacteria. The process of repair is therefore not attended by inflammation, but consists of hyperemia or determination of the blood-cells accompanied by dilation of the blood-vessels. Stagnation of the blood-current and the pressure produced by the vast number of blood-cells cause pain by pressing on the nerves, but, as soon as the circulatory disturbances subside, the pain ceases, the congestion and hyperemia disappear, and no pus is formed.

In any injury infection may, of course, be favored by certain physical conditions, such as already existing toxemia, anatomical changes which lower vitality, variation of nutrition, and unhygienic surroundings. There is also good reason for believing that prolonged anesthesia, by lowering the arterial pressure and limiting the amount of oxygen inhaled during a long operation, may produce such changes in blood and tissue as to interfere seriously with the necessary processes of repair and chemotaxis and thus facilitate infection. Even antiseptics, if employed too lavishly may, I believe, favor infection by poisoning the leucocytes and checking their action on the bacteria.

In addition to the conditions mentioned above infection may result from imperfect sterilization, whether of the skin and hair of patient and operator, which is indeed difficult of attainment, or of the instruments, gauge, suturing material, etc., used in the operation.

Having hinted at the action of the chemotaxis in the formation of pus and at the physiological protection afforded by the blood-serum and having also reviewed the forces causing infection and thus creating a demand for drainage, we are now prepared to consider the specific subject of this paper.

Drainage was first used to remove the pus which was the inevitable concomitant of surgery before the present era of asepsis and antisepsis. Drainage was then considered, and justly, a necessity, since without it absorption of poisonous material was inevitable.

Latterly we have drained to prevent pus formation, a process to my mind essentially unscientific. In a recent text-book occurs the expression, "Drainage empties the surface of blood-serum." So it does, but why do we want to empty the surfaces of the blood-serum, since, as we have seen, the serum acts as an antiseptic, occluding all dead spaces and promoting repair? Furthermore, the very presence of the drain, no matter how sterile the gauze may be, excites by irritation an increased amount of serum and the formation of blood clot; the excessive serum is then drawn by capillary attraction throughout the extent of the drain until all is moistened, creating a direct communication from a sterile wound cavity to an intensely infected atmosphere, providing a highway, if you please, for infection, at one end of which is blood-clot, an ideal culture medium for bacteria, at the other end myriads of bacteria anxious to be cultured. In the same text-book referred to above we find this statement, "The function of the gauze is complete after a few hours and may be removed." But its presence during even the few hours has altered cell-activity by its irritating action, and after its removal more serum must be formed that will protect the injured surfaces, fill up the dead spaces and promote restoration.

In certain of the septic and infective cases we must, of course, continue to drain, thereby sustaining the position of the older men who drained because they knew pus would form, as we now drain because we know pus *has* formed. I purposely state that we must still continue to drain some of the septic cases, for I want to be emphatically understood that I believe many of our septic cases can be made sterile and the wound closed without drainage.

In abdominal surgery the same general rule remains applicable, but here we also have other means of combating infection, *viz.*, purgation. It has been demonstrated beyond dispute that anything which interferes with the absorbability predisposes to infection. This is doubly true of the peritoneum, and free purgation promotes absorption by lessening the stasis of intestinal and peritoneal vessels.

Waterhouse has given us many interesting statements of experiments concerning the relations of blood-elements and toxins. He injected 6 c.c. of a cloudy culture of staphylococcus aureus into the peritoneal cavity of dogs without serious results; he then injected 8 c.c. of urine and small amounts of blood, likewise without serious results. Finally, he injected blood-clots and small amounts of a culture of staphylococcus aureus, resulting in a rapidly-developing peritonitis and death in twenty-four hours. This certainly should teach us that we must protect the blood-clots from invasion by bacteria, and the question arises, Can we do this by drainage? There is a fixed relation existing between the power of absorption of the peritoneum and the possibilities of infection. It has been positively proved that the peritoneum not only can, but does, dispose of large amounts of pyogenetic material as long as its absorbability is not interfered with; the less absorption the greater the danger, hence anything tending toward irritation of the peritoneum, promoting stasis of its vessels and retarding absorption, is a source of danger. Is, therefore, a foreign body like a drain tolerated by the peritoneum any more than any other irritant?

By diluting infection we promote absorption. The peritoneum can take care of a weakened solution of infectious material much more easily than it can make immune a surface constantly producing sepsis. A salt solution may be useful here, inasmuch as it is solvent to blood-clots, is itself a physiological fluid, and is very readily absorbed by the peritoneum and intestines, experiments showing that the normal peritoneum is capable of absorbing from three to eight per cent. of the body weight in one hour and the entire weight of the body in twenty-four hours. In its altered state, as produced by disease, we cannot say how much fluid it is able to absorb; we do know, however, how to stimulate the absorbability even of a diseased peritoneum.

Many unfortunate sequelæ follow in the wake of abdominal drainage. Hernia is common and may be said to be caused by drainage, the presence of which through the layers of the abdominal wall has lessened the cell-activity and weakened the repair. No other cause of ileus is so common, and removal of the gauze drain, when the tender granulations have grown through the meshes of the drain and are rudely torn, causes intense pain and sometimes serious relapse. We have seen that blood-serum plays an important part in the repair of wounds; that chemotaxis bears an important relation to pus formation, and that, *in sterile cases,* drainage is not only unnecessary but positively detrimental. Let me, therefore, urge upon you that, having given the patient the benefit of scrupulous care directed toward securing perfect sterilization, you restrict the use of drainage to those cases in which all the means at your disposal fail to render aseptic and non-infective.

CLINICAL MEMORANDUM.

A NEW URETHROTOME.

By GEORGE RUBIN, M.D.,
of Chicago, Illinois.

This urethrotome consists of three separate parts, *viz.*, a grooved shaft with bulb, a knife and a filiform (Guyon) conductor.

The grooved shaft is of small caliber, having at its lower end an olive-shaped bulb which conceals the blade. The lower third of the shaft is flexible; it bends either forward or backward, according to the manner in which it is to be used. At the upper end of the shaft are placed two fine screws which serve to arrest the blade within the bulb. When both screws are closed, the knife is fixed in the bulb and the instrument may be used as an exploratory sound without the least danger of injuring the urethra. When cutting forward, the right screw is closed and the left one opened, and after the incision is made, the knife is pulled back into the bulb, where it is automatically arrested. The operator, after each incision, will draw in the knife and try to pass the bulb; if the bulb does not go through, the instrument is turned a little to one side and another incision is made. If it still does not pass, the instrument should be turned around to the opposite side, and then posteriorly, etc., until the surgeon is able to pass the bulb with comparative freedom, because if the passage of the bulb is interfered with or requires some force to pass, it would show that not all the bands of cicatricial tissue have been severed.

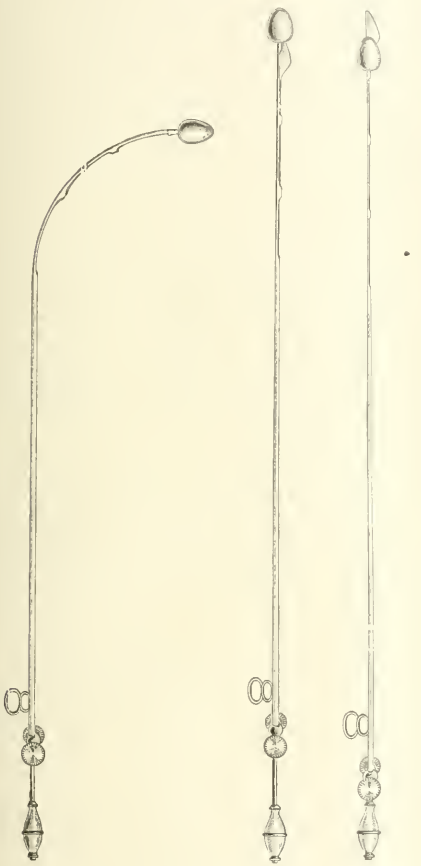
The knife is mounted on a very slender, flexible steel shaft, like the Maisonneuve, but the knife is not like Maisonneuve's, as the sharp edge extends over its whole convexity.

The conductor is a woven-fabric filiform bougie like Guyon's conductor, with a screw by which it can be connected to the apex of the bulb.

The filiform bougie serves as a guide and always directs the blade to the center of the lumen.

The urethrotome is most simple in construction and very easy to manipulate, and it is a very safe instrument in the hands of a non-specialist.

Fig. 1.



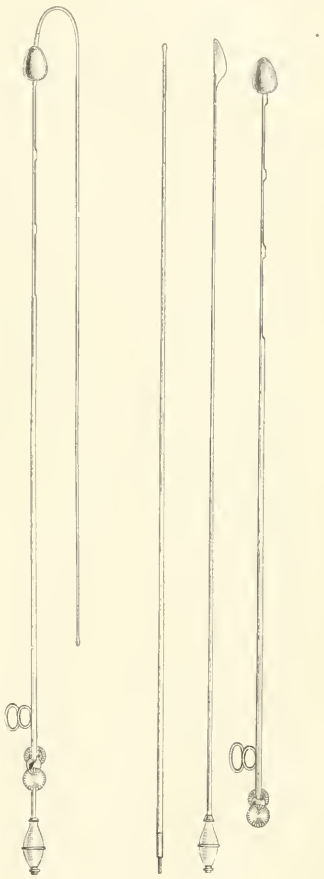
New Urethrotome.

All the parts are separate and uncomplicated and it is therefore easy to render them aseptic.

It is the only urethrotome with a bulbous end where the knife comes out in front of the bulb. The bulb keeps the healthy portion of the urethra distended and exposes the constricted portion to the knife; in this way it does not matter how narrow or how wide the stricture may be, the results will be practically the same. To cut a stricture of very large caliber, the bulb is passed beyond the stricture, and on the attempt to withdraw the bulb the stricture will naturally resist, so the bulb is retained in place and the knife is drawn backward, and if it still resists one proceeds in a similar manner as cutting forward and as many incisions are made in the circle as are necessary to permit the passage of the bulb without the least resistance.

By closing the left screw and opening the right one the knife will be arrested when its whole length is out, and when it is pushed back it will be again concealed within the bulb. Another and an entirely new feature of the urethrotome is its flexibility which is more than is necessary to accommodate the curve of the urethra.

Fig. 2.



New Urethrotome and Stylet.

Two urethrotomes—one with a bulb No. 27, and another No. 23, metric scale—ought to be sufficient for all practical purposes, the former

being of the average size of a normal urethra (adult), and the latter suitable for patients with abnormally narrow urethras or in cases of young adults.

When internal urethrotomy is decided upon, I believe it is best to at once reestablish the constricted portion to its normal caliber, and thus save ultimate lacerating with sounds in the after-treatment.

The instrument is made at the present time by Collin, Paris, and Truax, Greene & Co., Chicago.

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MEDICAL PROGRESS.

Meningococcus Intracellularis.—According to the experiments of Jaeger and Weichselbaum, writes Louis Fischer (*Pediatrics,* Oct. 15, 1900), this organism is far less virulent than the pneumococcus, bacterium coli, or the influenza bacillus, as shown by the frequent recovery from epidemic cerebrospinal meningitis, and the fatality of the other forms. The one constant symptom is spasm of the neck muscles which disappears only during convalescence, and is often absent in tuberculous meningitis. The best method of differentiation is by lumbar puncture and staining a smear from the pure culture on agar with Ziehl's solution. The tube-growth is rapid, yellowish, shiny, and slimy. Tapping the spinal canal has not only aided the author in diagnosis, but has given temporary or even permanent relief of the symptoms.

Nutritive Enemata and Gastric Secretion.—L. Metzger (*Münch. med. Woch.,* Nov. 6, 1900) has introduced various substances into the rectum of dogs and human beings in order to determine whether a flow of gastric juice took place. The experiments have in the main been negative with milk, eggs and other foods. If, however, red wine was added to the clyster, free hydrochloric acid appeared after a short latent period. The stomach-contents usually remained acid to litmus for an hour. The cause for the peculiar action of wine is not quite clear, but probably depends upon a reflex excitation.

Exploratory Craniotomy.—A new instrument is described by A. Codivilla (*Revue de Chir.,* Nov., 1900) for opening the skull, designed to replace largely the set of trephines and to cut out circles of bone larger than they make possible. Its parts are a tripod sharp-pointed center, transfixed vertically and centrally by a screw which passes through the skull and forces the points of the tripod into the outer table. Upon this center revolves a sleeve which carries the handle, hinged horizontally upon it. The handle presents a longitudinal slot, with a graduated scale along its upper face. In this slot plays the cutter-carrier which has thumb screws for setting it at any point of the scale and for advancing the depth of the cut into the bone. With the center *in situ* and the blade placed, the handle is carried round the pivot under manual pressure till the tables are divided when instrument and bone-button are removed together. The recapitulated advantages of this device are (1) the formation of any bone-flap which can be composed of segments of a circle; (2) division of the soft parts in the same geometrical form as the bone, but larger; (3) linear incision of the bone with little sacrifice of its tissue; (4) rapid, certain action without danger of damaging the cranial contents; (5) ease of assemblage application, operation and sterilization; (6) inexpensiveness.

The Kidneys and Glycosuria.—Certain indications, according to F. P. Rechter (*Zeitschrift f. klin. Med.,* Bd. 41, Hft. 1-4), seem to show that disease of the kidneys in diabetes can render the excretion of sugar difficult, leading to an apparent cure. It is also difficult to cause alimentary glycosuria in nephritis and in the same manner phloridzin is unable to cause much excretion of sugar in animals in which a nephritis has been artificially induced. The author thinks that the activity of the kidneys is an important factor in diabetes.

New Tissue in Cirrhosis of the Liver.—Simon Flexner (*Univ. Med. Mag.,* Nov., 1900) discusses at some length the nature and distribution of the new tissue in cirrhosis of the liver, and from his studies has drawn the following conclusions: (1) In all forms of cirrhosis the white fibrous tissue is increased. (2) Along with the increase of white fibrous tissue there is a new formation of elastic tissue. This new elastic tissue is derived from preexisting tissue in the adventitia of blood-vessels and the hepatic capsules. (3) Both white fibrous tissue and elastic tissue, in all forms of cirrhosis, may penetrate into the lobules. This penetration takes place along the line of capillary walls or follows the architecture of the reticulum. The chief distinctions between the histology of atrophic and hypertrophic cirrhosis depends upon the degree of extralobular growth and the freedom with which the lobules are invaded. In hypertrophic cirrhosis there would appear to be less interlobular growth and an earlier and finer intralobular growth. (4) The alterations in the reticulum, *per se,* consist, as far as can be made out at present, of hypertrophy rather than hyperplasia of the fibers. It is still uncertain whether any of the differential methods now in use suffice to distinguish between the reticulum and certain fibers derived from the white fibrous tissue of the periphery of the lobules.

Absorption and Metabolism in Apepsia Gastrica.—In a series of cases of apepsia or achylia gastrica, F. Strauss (*Zeitschrift f. klin. Med.,* Bd. 41, Hft. 1-4) has found the absorptive powers

of the gastric mucous membrane unchanged. Even in the intestines the food is utilized to almost the same degree as in health provided diarrhea was not present. Experiments with metabolism did not indicate that any pathological destruction of albumin occurred and the toxicity of the urine was remarkably low. Cases suffering from pernicious anemia gave the same results, which seems to speak strongly against inanition or intoxication as a cause for the anemia.

Justus Test in Syphilis.—The so-called "Justus test" is based upon the following proposition: Mercury destroys the hemoglobin of the blood. In the non-syphilitic subject, the organism rapidly replaces the lost pigment. In the syphilitic patient, however, the percentage being reduced by the disease, the organism cannot at once restore the still further reduction caused by the use of mercury. Consequently the first examination after an inunction or injection of mercury will show a distinct fall of from 10 to 20 per cent. This reduction is in turn followed as treatment is continued by a steady rise to the normal, where it remains so long as treatment is continued. Based upon their application of the test in 29 cases and their study of it as to its diagnostic value H. M. Christian and Otto H. Foerster (*Univ. Med. Mag.*, Nov., 1900) have arrived at the following conclusions: (1) That in the diagnosis of doubtful ulcers it is of no value. (2) That it seems to occur in a certain proportion of cases of acute secondary syphilis, where it appears to be a symptom of the disease and can in no sense be considered a true test, as the diagnosis in such cases is already complete. (3) That as a test it is not reliable, occurring as it does in conditions other than syphilis.

Idiopathic Phlegmonous Gastritis.—This disease is so rare and the number of cases reported so small that F. P. Kinnicutt (*Phila. Med. Jour.*, Nov. 17, 1900) reports a case which is one of two only of this form which he has seen in a good many years. The patient was a plumber, forty-one years of age. He had never had trouble with his stomach except after excessive drinking. After a hearty meal following a period of heavy drinking he began to vomit. At first the vomited matter consisted of food and later of a brownish fluid. The vomiting occurred frequently for four days irrespective of the taking of food. He had slight diarrhea. There was not any blood in the vomited matter or the stools. Some acute and more or less constant pain was present in the epigastrium and in the lower abdomen. The patient's pulse was 108, temperature (rectal) 101° F., and respiration shallow and 48 to the minute. The patient was anxious, restless, and undoubtedly very ill. Physical examination showed chiefly that the abdomen was moderately distended, with considerable rigidity of the abdominal walls, especially in the upper half. Slight sensitiveness on palpation was present, most marked over the epigastrium and the right hypochondrium. Slight crepitation was heard over the liver region and over the left hypochondrium. There were no signs of free fluid in the peritoneal cavity. Abdominal respiration, though present, was diminished. Urine, specific gravity 1025, was negative except for a few hyalin and granular casts. Lavage was employed and an odorless yellowish-brown fluid was returned. A general peritonitis was believed to exist, the supposed cause being an acute pancreatitis or a perforating ulcer of the duodenum. Preparations were made for an exploratory laparotomy, when the patient rapidly failed and died. He vomited large quantities of the yellowish-brown fluid during his last hours. Autopsy showed a diffuse suppurative gastritis and general peritonitis. There was a moderate amount of turbid fluid in the peritoneal cavity with some adherent fibrinous exudate. The walls of the stomach, which was normal in size, were greatly thickened due to a purulent infiltration of the submucosa. This thickening amounted to fully an inch at the pylorus and for three inches around it. The lower end of the gullet showed the same thickening and infiltration. The changes found in the stomach walls were swelling, softening, intense cellular infiltration, and a countless number of micro-organisms. The bacterial examination showed the universal presence of a streptococcus.

Apparent Tumors of the Abdomen.—Abdominal diagnosis is frequently a very difficult problem and eminent men have often said that they are seldom sure of the internal condition, after an external examination, even in comparatively simple cases. Max Einhorn (*Med. Rec.*, Nov. 24, 1900) says that he has had 42 cases of apparent tumor out of a total number of 6045 cases. These were instances of a mass in the upper part of the abdomen which could easily be mistaken for a neoplasm. He believes that they may be due to the following causes: (1) Prolapse of the left lobe of the liver; (2) exposure and thickening of the abdominal aorta; (3) hypertrophic condition of the abdominal muscles; (4) adhesions around the small curvature of the stomach. As no autopsies were performed his opinions are based entirely upon clinical examinations. In apparent tumors the mass presents a more or less smooth surface, with no distinct nodules. It is not always felt with the same ease and may even disappear altogether. A high degree of enteroptosis is usually associated with it. It may occur at any age; the history usually extends over a period of several years, and malnutrition is very gradual. The differentiation from malignant tumors is, however, very difficult at times and may be impossible.

Treatment of Cholelithiasis.—K. Witthauer (*Münch. med. Woch.*, Oct. 23, 1900) thinks that gall-stone operations are done too frequently at present and recommends that where fever and

enlarged gall-bladder are absent surgical interference should be deferred until medical treatment has been given a fair trial. The treatment at Carlsbad no doubt is best, and after this the administration of olive oil. This is first to be tried by mouth, with peppermint oil as corrigent, and only when the repugnance toward oil is great may it be given per rectum. Although this method is considered by many as antiquated, the author has found it necessary to advise operation only 5 or 6 times during his experience.

Cardiac Wounds.—Three recoveries among eleven cases of wound and suture of the heart in literature have been collected by F. Ferrier and E. Raymond (*Revue de Chir.*, Oct., 1900). The following conclusions have been reached: (1) The best flap for abscess is a thoracic trap-door with the hinge outward. (2) It is best not to open the pericardium across the pleura, but to carefully push this aside laterally. (3) Interrupted sutures are as a rule best for the cardiac wound itself. (4) In the majority of cases a drain is not needed for either the pericardium or the pleura.

Etiology of Eczema.—The predisposing causes of eczema are so numerous and diverse that the theory is frequently advanced that this may be an instance in which a single name is given to several distinct and separate conditions. L. D. Bulkley (*N. Y. Med. Jour.*, Nov. 17 and 24, 1900) has given a complete résumé of the multitudinous predisposing and exciting causes and is inclined to agree with Brocq that "eczema is the image itself of the life, the reflex on the skin of the constitution of the individual." The parasitic theory of causation was fully discussed at the International Congress last summer and the results may be summed up as follows: The majority of dermatologists do not regard eczema as a parasitic disease, due to a specific organism. The micrococcus of Unna is almost universally regarded as an ordinary staphylococcus with a slight peculiarity in its growth. Many observers are convinced of a local predisposition to eczema in the seborrheic state and a general predisposition in the circulation of various toxins in the skin, from the improper assimilation of food and other toxin-producing pathological conditions.

Atropine in Intestinal Obstruction.—That cases of acute intestinal obstruction, where immediate operation seems the only hope, sometimes are cured by large doses of atropine is evident from the case cited by B. Marcinowski (*Münch. med. Woch.*, Oct. 23, 1900). When first seen the patient was in collapse, with extremely tender abdomen, tympanites and vomiting. The following evening, after the vomitus had already become feculent, ½ of a grain of atropine was injected with the result that the absolute constipation was relieved and that the collapse symptoms slowly disappeared. After fourteen days the patient was up and about. An equally perfect result was obtained with the same large dose of atropine in a case of incarcerated hernia which had already been prepared for operation.

Intestinal Rupture.—J. J. Buchanan (*Annals of Surgery*, Nov., 1900) submits a case of traumatic rupture of the intestines with operation and recovery. The following are the points of interest; (1) Extensive peritonitis and free exudate within six hours after the injury; (2) rupture of the intestine without sign of external injury by an apparently slight blow; (3) almost entire absence of symptoms except failure of peristalsis and slight vomiting; (4) apparently favorable effect of Fowler's posture in the after-treatment; (5) entire adequacy of a long glass tube drain down to the pelvis, cleaned every half hour for the first day and at longer and longer intervals for the first four days.

Malaria.—J. McFarland (*N. Y. Med. Jour.*, Nov. 17, 1900) reviews the knowledge of malaria and shows the important advances made since 1880, *viz.*, the discovery of the plasmodium by Laveran, the discovery of its developmental cycle in man by Golgi, and its developmental cycle in the mosquito by Ross. The proofs are now complete that it is the *Anopheles claviger* which carries the organism from man to man. After sucking the infected blood from a human being, the mosquito harbors the parasites which undergo a cycle of development in about three weeks, and minute embryo-parasites are formed which are excreted in the saliva. To be infected with malaria, therefore, it is necessary to be bitten by a certain kind of mosquito at a definite time after it has been infected by the blood of a malarial patient. It is not the bite which causes the trouble, but the presence of the embryo-parasites in the saliva of the mosquito.

Puerperal Fever.—The usual treatment of this lamentable condition in the Bürgerspital, Hagenau, says Victor Steiner (*Centralbl. f. Gynek.*, Nov. 3, 1900) is as follows: Local disinfection of the vagina is striven for by copious lysol douches, 1-to-1000; after this the uterus is freely irrigated with kresol, half of one per cent., through the largest obtainable male catheter. Kresol is not only powerfully antiseptic, but relatively non-toxic, and in solution is clear so that blood-clots, fragments of placenta and shreds of membrane may be easily perceived in it. Extension of the inflammation into the pelvis demands cold locally. Quinine in large dose is used to combat chills due to the intra-uterine douches. Absolute quiet and perfect regulation of the bowels are absolutely necessary. Opium is often indicated, but may constipate, a fact often causing rise in the temperature. Serumtherapy has not been very successful.

Delirium Tremens.—The necessity of quieting a patient suffering from alcoholic delirium is easily appreciated, but it is oftentimes found a most difficult task even after large and frequent

doses of narcotics have been used. Good results have recently been reported from large doses of digitalis used especially at Bellevue. C. J. Douglas (*N. Y. Med Jour.*, Nov. 17, 1900) after considerable experience again urges the efficacy of apomorphine hypodermatically in doses of 1/30 of a grain. He says that the stream of consciousness can be shut off with valve-like precision by this method. Patients should not be restrained by physical force. It is needless and ineffective. Alcohol in some form should be prescribed, as its sudden withdrawal aggravates the disease and sometimes causes it. They should be nourished with milk, egg-nog or some other liquid food. The apomorphine acts within five or ten minutes and lasts from four to five hours. It may then be repeated. It seldom causes nausea.

Some Experiences with Fersan.—It is well known that, in giving iron in inorganic form, one must give much larger doses than are actually utilized and that gastro-intestinal disorders are almost invariable concomitants. The latter is also true of many organic preparations, not a few of which are unable to improve the composition of the blood. J. E. Folkel (*Münch. med. Woch.*, Oct. 30, 1900) speaks well of fersan, an acid albumin obtained from the red blood-cells. Not only as a blood tonic does fersan rank high, but as albuminous food it is only excelled, among the newer preparations, by plasmon. Special advantages are the high percentage of phosphorus which the drug contains, the entire absence of gastric disturbances, even after long use, and the rapidity with which the impoverished blood reaches the normal. Neither phthisis nor nephritis are contraindications to its use.

Eucaine in Medullary Narcosis.—To ascertain whether eucaine B would be an advantage over cocaine in spinal cocainization F. Engelman (*Münch. med. Woch.*, Oct. 30, 1900) had 1/6 of a grain injected into his subarachnoid space. After half an hour wandering pains were noticed in the small of the back which became intensified during the next hour, so that sitting on a chair was impossible. About the same time nausea, followed by protracted and severe vomiting, occurred and soon 8-10 chills and severe headache. On assuming the recumbent position the lumbar pains diminished, but the headache became almost unendurable and was coupled with an attack of dyspnea, excitement and precordial pain. The following day the pains persisted and even during the next week occasional neuralgias reminded the author of the experiment. It is noteworthy that not the slightest trace of anesthesia, even in the lower extremity, was present.

Thyroid in Cretinism.—J. H. Musser (*Internat. Med. Mag.*, Nov., 1900) reports several cases which appear to be on the borderlands of cretinism. Many of the features of these cases were lacking so that the diagnosis might be overlooked. Mental deficiency seemed to be the more prominent symptom in these patients. They were trained with the greatest difficulty and their personal habits were usually very uncleanly. Fits of temper, fretfulness and peevishness were common. Some of them showed a few characteristic features of this disease, especially in the development and contour of the face. The thyroid extract was very efficient in all these cases.

Functionating Power of Kidney After Nephrectomy.—Catheterizing the ureters in renal cases has been an enormous advance in surgery. It discloses the presence of a second organ and, to a certain extent, its functional value. There are many cases, however, where this method fails, as, for instance, where, usually owing to a tuberculous process, the bladder has so changed its shape that it is impossible to find the ureteral orifices. In such cases resort may be had to the following methods, according to H. Kummell (*Münch. med. Woch.*, Oct. 30, 1900): (1) The determination of urea. (2) The determination of the freezing-point of the blood. (3) The determination of the freezing-point of the urine. (4) The administration of methylene blue or phloridzin with subsequent examination of the urine. The first method is undoubtedly the simplest, but is the least trustworthy owing to the marked normal variations in the amount of urea excreted. Yet it may be said that a reduction down to 15-16 grams daily indicates insufficiency. A much more accurate method is the second. It has been found that normal blood has a freezing-point 0.56° C. below that of distilled water. A diminution of the freezing-point down to 0.50° C. or lower indicated in all cases that the kidneys are not functionating properly and contraindicates operation. Instead of blood, urine may be tested, when a freezing-point of minus 0.9° C. indicates renal insufficiency. This, however, does not hold true so absolutely as in case of blood. By means of a special apparatus the seemingly difficult experiment is rendered very simple. Cryoscopy, this new method of determining the functional quality of the kidney, promises to give some important results.

Extract of Testicle in Tabes.—The glowing reports which were made by Brown-Séquard upon the beneficial effects of this animal extract, especially upon himself, a man of seventy-two, has led to further investigation in many diseases. Tabes dorsalis and sclerotic diseases of the spinal cord are the conditions which have been most frequently treated by this drug. D. J. McCarthy (*Internat. Med. Mag.*, Nov., 1900) finds that even when the disease is rather far advanced there is often a certain amount of stimulation, the tone of the pulse becomes better, and the sexual hope of the patient may be resurrected by emissions and erections. There is, also, an increase in weight and nutrition usually following this mode of treatment; but the effect proves to be only an amelioration of the symptoms.

THERAPEUTIC HINTS.

Diphtheria.—Antitoxin treatment should be undertaken in every case and with all haste, writes Gilman Thompson. The patient's room should be kept at temperature of 68° F. with a tea-kettle or croup-kettle to render the air moist, or the steam may be directed under a tent improvised over the patient. The diet may be milk, broths, gruels, meat juice, egg albumin, oatmeal or barley-water, and ice cream. If swallowing is difficult peptonized milk and white of egg should be given every five hours. Thirst demands water and cracked ice. A temperature of 103° F. may require sponge baths at 80° F. The medicinal treatment consists of the following:

℞ Tinct. ferri chlorid. 0.7-2.0 (♏ x-xxx)
Glycerin..... .....
Aquæ .....aa. 8.0 (℥ ij)

every three hours, and mercury bichloride, gram 0.001 (gr. 1/60), q. 2 h., for a child of two years. For failing heart brandy is the best stimulant, with digitalis or strychnine, gram 0.0005 (gr. 1/120). The local treatment is chiefly directed to cleansing the mouth and nose. Irrigations are best and may be given with the child laid horizontally on a table, the head low, and the mouth directed toward the edge. The solutions best adapted for irrigation are: (1) Carbolic acid 3, alcohol 30, and water 70 parts; (2) bichloride of mercury 1 to 2000, with 4 or 5 parts of tartaric acid; (3) peroxide of hydrogen; (4) 1-per-cent. creolin; (5) Löffler's solution, which consists of:

℞ Menthol..... ..... 10.0 (℥ iiss)
Toluol q. s.....ad. 36.0 (℥ ix)
Liq. ferri chloridi..... 4.0 (℥ j)
Alcoh. absol..... 60.0 (℥ ij)

All irrigations are lukewarm, never forceful, and may be used every two or three hours, or every hour in severe cases. For nasal use the above must be diluted. For a laryngeal membrane syrup of ipecac, one or two teaspoonfuls, or mercury subsulphate, gram 0.12 (gr. ij), may be employed early, or, better, calomel, gram 0.7 (gr. x), may be vaporized on a tin dish and inhaled.—*Practical Medicine.*

Chronic Catarrhal Colitis.—Treat, not only the colitis, but rather the general physical condition, flatulence, nervous symptoms, etc., says Delafield, and do not look at the feces too often lest the patient's mind dwell too much upon them. Give plenty of mixed diet, noting the effect of special foods. Advise plenty of fresh air and exercise, and horseback or bicycle riding. Keep men at business. If constipated give the mildest laxatives; if there is diarrhea the bismuth preparations are harmless and please the patient. The routine medication consists of capsules of castor oil, gram 0.3 (♏ v), and salol, gram 0.3 (gr. v), or cubebs, gram 0.3-0.7 (gr. v-x), acid arsenous, gram 0.002 (gr. 1/30), and belladonna up to the poison limit. When only the rectum is involved, irrigate every day for a month with mild zinc-sulphate or zinc-chloride solution, or with infusion of linseed, and give no drugs by mouth. In the prolonged cases a dry, inland, elevated climate may be beneficial. Here the patients should be encouraged to live in the open air most of the time.

Simple Conjunctivitis.—Examine first, says De Schweinitz, for foreign bodies or misplaced cilia. In the earlier stages cold compresses are advantageous, later hot water is preferable. The eye should be frequently washed with water and Castile soap and boric acid, gram 0.7 to grams 30.0 of water (gr. x-℥ j) dropped in. When the discharge becomes mucous or mucopurulent, paint with solution of silver nitrate, gram 0.12-0.3 to grams 30.0 (gr. ij-v to ℥ j), and use stronger boric acid with sodium chloride added. In severe types wash eyes with bichloride of mercury, gram 0.045 to grams 500.0 (gr. ¾ to O j). Any thickening of the retrotarsal folds may be touched with alum or glycerite of tannin. Atropine is not necessary unless there is a corneal ulcer or other complications. Poultices should never be used. The eyes may be protected with smoked glasses.—*Diseases of the Eye.*

Calomel Injections.—In syphilis Fournier does not inject large quantities as was formerly the practice, but prefers a dose of gram 0.03-0.05 (gr. ½-5/6) injected every week or ten days from four to six times. He uses sublimed calomel, thoroughly porphyrized and washed with boiling alcohol. Of this gram 0.5 (gr. viij) is mixed with sterilized olive oil, grams 10.0 (℥ iiss), one c.c. (♏ xv) containing gram 0.05 (gr. 5/6) of calomel. If necessary one-fifth as much pure cocaine as calomel may be added. Fournier, having tried many forms of mercury and numerous vehicles, considers this the formula of choice. Calomel is more certain and more powerful than other mercurials, is less likely to cause stomatitis, gastro-intestinal symptoms and constitutional disturbance, and causes less local reaction. Moderate pain at the site of injection is not uncommon, but this is rarely severe.—*Revue de Thérapeutique.*

Black Draught.—In this, writes Lauder Brunton, there is one thing to cure by acting upon the intestinal secretion, another to help it by acting on peristalsis, another to make these act safely by lessening griping and flatus, and still another to make the compound more agreeable. The formula of the British Pharmacopœia is:

℞ Magnes. sulph.....120.0 (℥ iv)
Fl. ext. glycyrrhiz..... 30.0 (℥ j)
Tr. cardam. comp..... 45.0 (℥ iiss)
Tinct. sennæ..... 75.0 (℥ iiss)
Infus. sennæ.....450.0 (℥ xv)

M. et sig.: One to one and a half ounces.—*Action of Medicines.*

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AN IMPROVEMENT IN THE MANAGEMENT OF THE NEW YORK CITY HOSPITALS.

The first draft of the report of the revision of the Charter of the City of New York has a proposed Act on City Hospital Management of sufficient interest to the medical profession to excite considerable discussion.

The removal from the care of the Commissioners of Charities and Corrections of the management of Bellevue, the Fordham, the Gouverneur and the Harlem Hospitals and the placing of all control of these in a board of seven trustees, who shall serve without salary, is, we feel, a long stride toward certain ideals which never could be realized under the present state of administration.

To grasp the full benefit of such a proposed change and to be able to appreciate the scope for improvement that would be offered to these hospitals, one must combine a technical knowledge of the details of a hospital's management with a genuine desire for philanthropic work, and those who possess this knowledge read a special significance in the following clauses: "No member of the Board of Trustees shall receive any pecuniary compensation for his services, nor be interested, directly or indirectly, in the furnishing or performing of work, labor, services, materials or supplies of any kind, to, or for, said Hospitals by contract or otherwise," and, "No member of the aforesaid Board of Trustees shall hold any office of emolument under City, County, State or National government, except the office of notary public or commissioner of deeds or offices in the National Guard."

Our esteemed contemporary, *The New York Medical Journal,* in commenting on the proposed Act, professes much surprise at such a "radical," "incomprehensible," and "incongruous" change of policy in the management of this group of the city's hospitals, and hastens to assure its readers that if, by chance, they thought it was to be made in order to remove these hospitals from the sphere of "practical politics," the fact has not become generally known that they were suffering from any such cause.

There are more ways than one to account for facts not being generally known; but it is not the past management of these hospitals that is under discussion, but their possibilities under a liberal, untrammeled board of trustees of wisely selected unsalaried men, with perhaps one medical man among the seven.

Boston and Cincinnati are the only cities in the Union that have adopted this method of administration for their city hospitals, but the success of their experiment has justified the wisdom of the principles on which it was based.

In New York's problem the interest centers about Bellevue, for its efficient management means the best care that the city can give to the largest number of laboring men and women. The patients of Bellevue are not paupers but wage-earners, and the fact that they cannot pay for medical treatment should in no way make them feel that they are accepting an ignominious charity; and yet the working public do feel, whether justly or not, that to be taken to Bellevue Hospital is a stigma of pauperism. This is but popular prejudice and has nothing to do with the excellent medical treatment received at Bellevue, but is distinctly an outgrowth of the shifting political management of the hospital. To place it, therefore, under the same system of trustee management that is in force in private hospitals, and that has been so successful in the city hospitals of Boston and Cincinnati, will remove the feeling from the self-respecting. When Bellevue adds to its famed medical reputation the reputation of being one of the cleanest, best managed, and most honorably served hospitals in the city, it will become the people's pride as well as the physician's standby.

Those who are in argumentative mood inquire, with some logic, why only four hospitals should be selected for the change and why the other hospitals now controlled by the Department of Charities, should be omitted. The reason is one of expediency only and is the result of mature deliberation on the part of the Charter Revision Committee, who feared that failure might attend the change of system of the many city hospitals at once, but who were confident that the management of the four selected could be altered to the satisfaction of every one and that the change could ultimately be made for all.

With the change of management New York City, with the money, science and philanthropy that it has at command, can develop a type of modern municipal hospital that will equal any private hospital in the land.

The possibility of friction resulting from the half change is strongly urged by those who do not want any change at all. Practical difficulties certainly do exist, as the overflow of patients from the Bellevue group must be taken to the Island group and certain details of administration connected with the Charities Organization, such as the stabling of horses and the supply of drugs and power and heat which are connected with the Bellevue property. These details, however, are such that can be either harmoniously and justly attended to or can be used to rub up considerable friction, but the unsalaried board of trustees will not do much rubbing.

President Keller, the present Commissioner, has done all that any man could to improve the conditions of the hospitals in the Department of Public Charities; but the system and the inherited evils of administration have been too strong for him. His experience, however, will be of value to the new board of trustees of which he will be an ex-officio member, if the revision bill passes. It has been owing to his energy and effort that Bellevue has offered greater facilities than ever before to medical education by admitting to its bedside clinics the students of the University, Columbia, and Cornell Medical Schools.

It, therefore, strikes us as rather a bit of sentiment to quote President Keller as saying that he feared the proposed change might be designed to bring the hospitals more completely under the control of the leading institutions, and that, as they were intended primarily for the relief of the sick and only incidentally for educational purposes, the change was to be deplored. Any such generalized philanthropy must be made very sharp and clear. Hospitals are first, last and always for the sick, and Bellevue Hospital has always had the sickest of the sick in its wards, not only the worst cases but the greatest variety of them. This fact has attracted the best physicians and the best medical students to give their services as attendants and as internes to the institution, and in consequence it has had one of the best medical services to be had, and the hospital's fame and success have grown *in spite of the management*. The connection of the hospital with the University, Columbia, and Cornell Medical Schools has been its chief cause for congratulation. It is the energetic, eager interest of medical teachers that has given every patient the most thorough and careful handling and has kept the hospital from degenerating into a lazar house. It is, if the statement must be made openly, because, in addition to treating, so much more might be done than has been done for the comfort and consideration of the city's sick; so much more healing applied for the same amount of money expended; so much more freedom given to the doctors who are the mainstay and means of its existence to carry out the methods of treatment, that the revisers of the charter propose this radical change in the management of the specified hospitals.

SALT STARVATION IN THE TREATMENT OF EPILEPSY.

Common table salt was used by Hammond and Hamilton several years ago in the experimental treatment of epileptics with no apparent diminution of convulsions. It is a common experience that in the healthy classes, consumers of salt in large quantity are liable to be very irritable. This is especially marked in epileptics, as stated by Clark in a paper read at the Buffalo Academy of Medicine. He reports several epileptics at the Craig Colony, who, if unchecked, eat nearly two ounces of salt daily at meals in addition to the customary amount employed in preparing the dietary.

It will be remembered that Toulouse and Marchand last year ingeniously suggested that by reducing the salt in the epileptic diet the amount of bromides may be correspondingly materially decreased, the rationale being that bromine can substitute chlorine in the tissues. Animal experimentation proved that when dogs and cats

were fed on bromine and salt starved, the gastric juice contained bromhydric instead of chlorhydric acid. In the kidneys, brain and bone marrow, the proportion of bromine to chlorine found was two parts of the former to one of the latter. Bromine is not a foreign substance, but a true mineral constituent of the body. Thus it appears there is a good basis for the clinical fact that when an epileptic is under salt starvation, the bromides are more greedily absorbed in the tissues, and as it is the amount of bromides taken in the tissues, and the permanency with which such quantities can be induced to remain in the human economy, the value of Toulouse's method is obvious.

It is difficult to persuade epileptics to undergo voluntary deprivation of salt, and a semistarvation or a relapsing diet must be instituted. One of the best and easiest methods is the maintenance of epileptics on a milk diet. For a long time it has been known that a milk diet materially lessens the formation of toxalbumins in the intestinal tract, but, employed in conjunction with bromides, it has additional potency due to salt deprivation. Clark's dietary is a modification of that of Toulouse, and has the advantage over the latter in being much more palatable and easily cooked. It is as follows:

Breakfast: Milk, one pint.

Lunch: Two soft boiled eggs, farina, milk and sugar, coffee; or muffins made of eggs, farina, milk and sugar, and coffee.

Dinner: Bouillon unsalted or chicken-broth with a little rice; boiled beef unsalted or roast beef unsalted; potatoes.

Supper: Porridge made with farina, sugar, boiling milk; or milk and rice.

An occasional meal with the meat seasoned with a small definite amount of salt may be given, say sixty to eighty grams.

By this method the amount of bromide salt may be reduced by one half and the same therapeutic results may be obtained as before the method was instituted. Not one of the least of its virtues is the lessening by one half the chance of bromide poisoning. Toulouse cautions that in inaugurating the method the bromides should be decreased slowly. Patients should be watched closely in adjusting the balance between the decrease of sodium chloride and the substitution of the bromide salts. Toulouse prefers the sodium bromide, while Clark selects the tribromic mixture of ammonium, sodium and potassium. Nacke, Roux and Richet have all reported favorably in experiments of several months in long-standing cases of epilepsy. Its economy is obvious in epilepsy and other diseases where bromide sedation is needed over a long period of time. Sufficiently satisfactory results have now been reported for us to say that Toulouse's method is a real advance in our knowledge of the treatment of epilepsy by bromides, the chief sedative for this disease. It will be found especially of value where large dosage of bromides has not heretofore been possible because of the resultant toxicity, or in which high dosage has been inefficacious.

PURPURA RHEUMATICA SUCCEEDING ANGINA.

The relation between rheumatism and anginal affections has been the theme of many writers both here and abroad. Their articles have called forth increased attention to the sequelæ of the ordinary throat affections, and in the *Berliner klinische Wochenschrift*, November 5, 1900, A. Brück gives us the results of his own observations in the matter.

Attention once directed more intently to the cause of the rheumatic affections, it became evident that many of them followed closely upon some slight or perhaps severe tonsillitis. The investigations showed that it was well within the range of probability that the portal for the entrance of the infecting organisms was the adenoid tissue of the tonsils. From this origin, they find their way by means of the blood-stream to the various localities to renew their pernicious activity. The presence of streptococci, staphylococci and even of the pneumococcus of Fraenkel in the tonsils, the blood and the joints, has been clearly demonstrated.

Following this reasoning, acute articular rheumatism would be nothing else than a rather mild form of pyemic inflammation. The attending complications, *i. e.*, endocarditis, hyperpyrexia, hemorrhagic skin affections, all go to prove the conclusion.

The reason that in every case of rheumatism we have not yet succeeded in finding an antecedent anginal affection may be ascribed to the similar condition of a lymphadenitis in which we fail to find the initial surface wound through which the germs found entrance. The little wound or abrasion may be long healed over and forgotten before the more serious metastasis is discovered. The reason for the attack by the

germs on the articulation rather than on other anatomical parts is perhaps found in the fact that they are the parts of least resistance, as they are also in the other acute infectious diseases such as diphtheria, tuberculosis, and gonorrhea. The skin affections coincident with rheumatic attacks, erythema nodosum, erythema exudatum multiforme, peliosis rheumatica, may likewise be said to be dependent upon micro-organisms for their production.

Brück says that their occurrence succeeding angina is not nearly so infrequent as has been stated by others. Who would think of examining the skin of the entire body in every case of sore throat in daily private practice? On the other hand, who would question a patient suffering from such skin affection as to whether he had had a previous sore throat? Even if the query were put, the angina may have been so mild that it escaped the patient's memory.

Brück chooses four cases from his practice which illustrate his theory. In every case there was either a well-marked petechial affection of the skin or some rheumatic trouble, or both, succeeding a tonsillitis lacunaris. The condition succumbed to the salicylates. In one patient the entire body, excepting face, neck and chest, was covered with petechiæ. In others, only the legs were covered with a mild petechial eruption. In all of the patients the beginning of the rheumatic symptoms followed so closely after the cessation of the throat symptoms that the causal relationship seemed to admit of no question whatever.

These latter were so unimportant in three cases as to awaken no anxiety whatever in the mind of the patient. The rheumatic conditions were muscular as well as articular in character, from which we glean the identical origin of the two. Cases which have been cited by Babes and Reher agree fully with the idea advanced by Brück.

The etiological dependence of angina lacunaris, acute muscular and articular rheumatism and the purpuric skin eruptions is thus satisfactorily dismissed by him as being absolutely proved. It might not be amiss to declare that in this category would belong otitis media. Black has shown this connection in publishing his cases. Gradenigo has done likewise. It would certainly be of value if more time was given to searching for such causes as above enumerated in all cases of rheumatic affections and their accompanying skin eruptions

ECHOES AND NEWS.

NEW YORK.

Smallpox Situation.—Since last week's report in the Medical News 34 additional cases have been reported, thus making to date a total of nearly 40 cases.

Roentgen Society of United States.—The first regular meeting of this Society will take place in New York City, Grand Central Palace, December 13 and 14, 1900.

Bequests to Hospitals.—By the will of the late Mr. Robert G. Dun the following institutions are to receive $5000 each: The Presbyterian Hospital, St. Luke's Hospital, Mt. Sinai Hospital, and the New York Institution for the Instruction of Deaf and Dumb.

New Immigrant Station.—The Bureau of Immigration will be transferred from the present quarters to the new station on Ellis Island the 15th of this month. The transition from the cramped and badly arranged quarters which the bureau has occupied since the fire that destroyed the old station on the island in 1897 will be marked. One has only to remember the old ramshackle structure to be able to appreciate the magnificent and admirably arranged new quarters. Situated on one of the most prominent locations in the harbor, the new station is an imposing as well as a pleasing addition to the picturesque water-front of the metropolis.

Obituary.—Dr. R. B. Lincoln died last week of a peculiar type of intestinal obstruction, at first diagnosed as appendicitis. He was born April 17, 1841, in Benchertown, Mass. At the close of the war he took a three-years' course in medicine in Harvard, graduating in 1868. He served for a year as house surgeon in the Massachusetts General Hospital in Boston, after which he took up practice in this city. He was a member of the Loyal Legion, the New England Society, University, Amherst Alumni, Harvard Medical, and the Mendelssohn Glee Club, the American Medical Association, the New York Academy of Medicine, and the American Academy of Medicine.

Scarlet Fever on Long Island.—Scarlet fever is epidemic to such an extent in the village of Baldwins, L. I., that Thanksgiving festivities planned, including an entertainment in which many children were to take part at the Methodist Church, had to be postponed because of the malady.

Tuberculosis Hospital Plans.—The report of the Board of Trustees of the State Hospital for the Treatment of Incipient Pulmonary Tuberculosis was received November 30th, by Robert W. Hebbard, Secretary of the State Board of Charities. The report says:

"The Board of Trustees was appointed in May of this year, and from that time until the end of

September the members were engaged in inspecting the various sites in the Adirondacks which were offered to us or which we thought might be eligible. Twenty-six were examined and discussed. It became clearly apparent to us almost at once that it would be impossible to place the institution more than a mile from a railroad, as the amount of truckage necessary in the construction and maintenance of the hospital would be so great as greatly to injure the usefulness of the institution. This narrowed our choice very much. With the aid of the State Architect, a plan of requirements for the institution was made, which were fifteen in number, beginning, of course, with sufficient water supply. Next came the quality of the soil, the elevation, the sufficiency of the protection from the wind either by forest or hills, accessibility of the site from the nearest railway, etc. Several sites were visited three or four times. By the end of August the selection had narrowed itself to three or four sites, and at the end of September, at a meeting held in Albany, the trustees selected a site at the west end of Lake Clear, Franklin County.

"By the terms of Section 7 of the Act incorporating the institution such site is subject to the approval of the State Board of Health and the Forest Preserve Board. The Secretary of the Board of Trustees of the State Hospital notified these two boards of the approval of our selection of the site. The Forest Preserve Board visited the site, as did also Dr. Daniel Lewis, the President of the Board of Health. A public hearing was had on October 11th by these boards of approval, but no decision has been rendered. This is all the report that we can make as to the affairs and conditions of the hospital. The appropriation this year granted to us by the Legislature under the act of incorporation was $50,000. The only expenses of the institution so far have been the traveling and other expenses of the trustees.

"We hope that the site may be purchased at from $10,000 to $12,000. More or less of the appropriation will be expended this autumn in maintaining roads, clearing the ground, preparing reconnaissance surveys, and making preliminary excavations, but certainly some part of our appropriation will remain unused. As to the amount required by us for operating expenses next year, it may be said that there is so little probability of the hospital being ready for the reception of patients before next autumn at the earliest, that we need only ask for a small amount, and this amount is rather in the nature of a precaution. But we think the sum of $21,600 should be set aside as a precaution for the maintenance of a hospital during the months of October, November, and December, in case it shall be ready for patients at that time.

"In regard to the amount to be appropriated for the construction of the hospital by the next Legislature, we are of the opinion that a hospital cannot be built and equipped under $200,000, and we may add that our opinion is formed from information given to us lately by the State Architect. The preliminary plans are now being prepared by him. It is our purpose to submit copies of these plans to a number of prominent men of America and Europe for their criticism and suggestions, so that when they are laid before you they will present the result of the best medical judgment that we can obtain."

Dr. Noyes and the New York Eye and Ear Infirmary.—Dr. Henry D. Noyes was a graduate of the College of Physicians and Surgeons in the year 1855. After serving on the house staff of the New York Hospital, he went to Europe to continue his studies. Devoting himself to special work in the ophthalmic clinics there and latterly a student of Von Graefe in Berlin, he returned to America and in September, 1859, was appointed assistant surgeon to this Infirmary. In November, 1864, he was made surgeon. From 1873 until 1898 he served as executive surgeon and on October 23, 1900, his resignation as a member of the surgical staff was received by the Board of Directors—by the Board at whose councils he had sat for a period of thirty-six years. This long service of one, who during nearly the entire time held foremost position in conducting the affairs of the Institution, covers more than half the period that has elapsed since the foundation of the Infirmary. These years have seen marked changes in the growth of the Institution and a brief reference to the statistics, furnished by our Annual Reports, may not be out of place. In the year 1859 there were 4176 new dispensary patients and 144 in the wards. In 1899 there were 47,684 new dispensary and 2257 house patients. In 1859 the surgical staff consisted of 9 men. Now 83 medical men are engaged in the work. In 1859 it was an Eye Infirmary. Now there are the three departments of the Eye, Ear and Throat. The well-ordered Hospital of to-day, with its superintendent and clerks, its isolated cataract wards and pavilion for contagious ophthalmia, its training school for nurses, school for instruction for graduates of medicine, its annual volume of scientific transactions, its valuable medical library, owes in no small way its preeminence to the wise forethought and ceaseless activity of Dr. Noyes.

The Rules and Regulations of the Infirmary were largely the result of his careful study, and it was perhaps characteristic of his unselfish devotion to the Institution that, shortly before his resignation of the position of executive surgeon, he prepared rules that gave this office largely increased powers and left the enjoyment of them to his successor.

Bringing as he did to the discharge of his professional duties a vast knowledge of medicine, a facility and originality in operative procedure, he was unsparing of self in his devotion to those who came under his care. He was

prompt in recognizing the value of suggestions made by others in his field of work, and his distinguished position as an author and teacher added to the fame of the Institution both at home and abroad. Throughout the years of his connection with the Infirmary Dr. Noyes contended for an increase in our scientific and laboratory work. He urged that there could be no effective and perfectly developed charity that is not associated with scientific investigation.

Dr. Noyes died on the 12th of November, 1900. It is fitting that the medical staff of this Institution, to the service of which he had devoted all the years of his active professional life, should record their appreciation of the work of a man who has contributed so largely to make the Infirmary what it is. It is proper that at this time, feeling the irreparable loss they have sustained in his death, they should, in the spirit in which he lived, dedicate themselves anew to a service, not alone as ministers to humanity, but also as ministers to knowledge in medicine.

The Alcohol Question.—A meeting of the New York State Medical Alliance will be held at the New York Academy of Medicine, 17 West 43d Street, Thursday, December 13th, at 8 P. M. Dr. Winfield S. Hall, A.M., M.D., Ph.D., (Leipzig), Professor of Physiology in the Northwestern University Medical School, Chicago, will read a paper on "Ethyl Alcohol: Its Biology and Its Relation to Physiology, to Pharmacology, and to Therapeutics." Discussion of the paper is expected by Professor Conn of Wesleyan University; Professor C. A. Herter of the University and Bellevue Medical School; Professor Woodbury of the Philadelphia Polyclinic and College for Graduates, formerly Professor of Materia Medica and Therapeutics in the Medico-Chirurgical College of Philadelphia, and by others. Dr. Andrew H. Smith, President of the Alliance, will preside. The medical profession is cordially invited.

PHILADELPHIA.

Resignation of Dr. Lloyd.—Dr. J. Hendrie Lloyd has resigned his position as neurologist to the Philadelphia Hospital.

German Hospital Donation Day.—On Thanksgiving Day the German Hospital received over $8000 in cash. In addition to this the firm of C. F. Rumpp & Sons contributed $5000 to endow a free bed for the benefit of their employes.

Physician for Department Store.—Gimbel Brothers have recently installed a woman physician in their department store. Female employes are treated at her office in the store, a purely nominal charge being made for the services rendered.

"Ostrich Man" Visits the City.—Harry Harrison, of Syracuse, N. Y., gave his annual exhibition of swallowing pieces of glass, nails, tacks, broken knifeblades, etc., at the Medico-Chirurgical Hospital last week. He seems none the worse from the operation which he underwent in Baltimore last year.

Disinfecting Barges Sent to Cuban Ports.—Two disinfecting barges, which were converted from schooners by the Kensington Engine Co., have been sent for service at Matanzas and Cienfuegos, Cuba. Neither is self-propelling. They contain full apparatus for the handling of formaldehyde, sulphur dioxide, etc. Another barge for quarantine work in Porto Rico is now under course of construction here.

New Trick of Sneak Thief.—A prominent physician of the city recently had a well-dressed caller who waived his priority of examination in favor of a second caller who was in a hurry. The latter left his hat, gloves, silk umbrella, and eye-glasses in the outer waiting-room. When he came from the consulting-room these articles, as well as the polite stranger, were missing. A description of the man has been given to the police in the hope of preventing a repetition of the act.

Osteopaths Desire Special Laws.—A bill to regulate the practice of osteopathy in Pennsylvania will be introduced by osteopathists at the next session of the Legislature. At a meeting of their State Society in Harrisburg last week it was stated that they would not antagonize any system of treating disease. The plea that osteopaths should come under the jurisdiction of the present State Medical Boards they consider to be a plea for protection of medical trusts. Efforts are, therefore, to be made to secure the appointment of a board of osteopathic examiners who are specialists in anatomy and who are conversant with the osteopathic system of treatment.

Report of State Factory Inspector.—State Factory Inspector Campbell has issued his report for the year ending October 31st. In the main the results of the year's work are satisfactory. The bake-shop law has greatly improved the sanitary condition of the shops, many of the poorer ones having been abandoned, but as a result home workers are rapidly increasing. This increase of home workers has a tendency to reduce wages and spread disease. Through the aid of the Boards of Health in Philadelphia and Pittsburg a large amount of clothing made in homes where contagious diseases existed has been located and destroyed. The cooperation of these two departments is of the greatest importance. Inspector Campbell recommends the appointment of ten additional inspectors and the establishment of suboffices of the department in Philadelphia and Pittsburg.

Pay for School Physicians Urged.—The Committee of Medical Inspection of the Public Education Association has adopted a resolution recommending that the medical inspectors of schools

be paid a salary of $500 each for their services during the school year, from September to May, inclusive. This, it is believed, would insure uniform work and a definite and responsible organization. The Committee suggests that the corps of visiting physicians consists of 200. The inspectors held a meeting Saturday to consider a constitution for their proposed association. It was only partially adopted.

Extensive Operation on Neck.—Dr. W. J. Hearn reported an instructive case at the Academy of Surgery Monday evening. The patient was a physician, the operation being one for secondary lymphosarcoma of the neck. A portion of the internal jugular vein was excised, the pneumogastric, phrenic, and sympathetic nerves were divided, and a portion of the thoracic duct removed. No immediate ill effects followed the division of these important structures, and speech was preserved. A fistula through which the chyle escaped was present for some time, but this finally healed. The patient died some time afterward from a return of the growth and chronic sepsis.

Operative Treatment for Cirrhosis of the Liver—Dr. Chas. H. Frazier reports a case operated upon nearly five months ago at the University Hospital which shows very satisfactory results. Diuretics and tappings had produced no effects. The abdomen was opened, the peritoneum at each side of the wound rubbed with gauze to produce irritation and the omentum sutured to the parietal layer. The wound was closed without drainage. The patient was tapped on the thirteenth day after the operation and a second time on the thirty-sixth day, since which time no accumulation of fluid has taken place. No other treatment was instituted except necessary laxatives. There seems to be no doubt of the success of the operation in this case. Dr. Frazier believes that suprapubic drainage after such operation is an unnecessary risk of infection and advises against its use. The abdomen should be closed and tapping resorted to while venous channels are forming in the adhesions. The operation should be done under local anesthesia if possible, as such subjects bear ether narcosis very badly.

County Medical Society; Treatment of Gonorrhea; Cystoscopy in Women.—At the meeting of November 28th Dr. Edward Martin detailed the treatment for gonorrhea which he has adopted after a thorough trial of various methods. The most important part is local treatment. Hand injections of protargol or other silver preparation are begun at once when the case is seen. A few drops are let fall between the separated lips of the meatus to reach the parts which the nozzle of the syringe passes by. The anterior urethra is then filled and the solution retained for three minutes. This is done every two hours, the silver solution being gradually weakened after a day or two. Irrigations of potassium permanganate, 1-6000, are used night and morning. This is gradually strengthened up to 1-3000 and after six or eight days used only at night. Autoirrigation is taught in most cases. Internal treatment consists in making the urine bland. Lithia tablets are given six times a day with a glass of water each time. Salol is given in five-grain doses four times a day. The diet is largely determined by what agrees with the patient, pastry and such articles being of course forbidden. Moderate exercise is allowed and a prolonged hot bath given every night. Under this treatment 25 per cent. of the cases are cured in from six to eight days. Others take twelve to fifteen days and a certain percentage takes longer, as they do under any treatment which may be instituted. Chordee, painful urination, etc., almost never occur. If gonococci are found after fourteen to sixteen days, treatment is again instituted with the addition of an astringent injection. The silver injection should be used, as long as gonococci persist. When the discharge lasts for six to eight weeks the urethra should be explored for the cause, milking the follicles from behind forward by means of a dilating instrument, posterior irrigations, and massage of the prostate may be indicated.

Dr. John G. Clark discussed the subject of cystoscopy in women. He advises the use of the Nitze cystoscope first in cases demanding exploration of the bladder. It is the best instrument for office work and for preliminary examination under any circumstances. Its use is less annoying to the patient and for this reason her cooperation in subsequent procedures is more likely to be secured. This instrument is valuable in locating points of disease and affections of the bladder generally occupy only a small area. This is true even of cystitis in which the trigonum is usually the only part involved. By systematic rotation of the instrument the whole interior of the bladder may be gone over. When the portion of the bladder at fault is determined the Kelly apparatus is used for any further work that may be necessary. Dr. Clark has noticed that operators, especially those abroad, who have trouble with the Kelly apparatus do not place the patient in the proper position. The shoulders and chest are not kept flat upon the table and in some instances the abdomen was supported instead of being kept free to allow ballooning of the bladder.

CHICAGO.

Warden of Cook County Hospital.—There is considerable opposition being manifested against the reelection of James H. Graham as Warden of this Hospital. The medical profession is almost a unit in favor of placing a physician in the position of Warden rather than to reelect a layman.

Resignation of Dr. Stehman.—Dr. Henry B. Stehman has resigned the position of medical

superintendent of the Presbyterian Hospital, after serving for fifteen years in that capacity. A successor will be chosen before January 1, 1901.

Transfer of College of Physicians and Surgeons.—The terms of the contract under which the College of Physicians and Surgeons, which is now affiliated with the University of Illinois, will become ultimately the property of the University have been made public. The arrangement is one by which in the course of a number of years, estimated at from twenty to thirty, the University will be able to pay for the College out of a fund accumulated from a certain portion of the profits to be set aside each year. According to Dr. Quine, the University of Illinois assumes no financial responsibility in the transaction. The College is the property of a stock company, which owns a large site of land and several buildings on the west side. For the rent of these the University agrees to pay $12,000 a year out of the gross receipts to the directors of the College. Then, after paying the expenses of operation, two-thirds of what is left will be used to pay professors' salaries, and the balance of the receipts will be invested by the University in the purchase price fund. When this fund reaches $217,000 it is to be paid over to the directors of the school, and title will pass.

Resignation of Dr. Christopher.—Dr. W. S. Christopher resigned from the Board of Education, after having served since 1898. He introduced a system of child-study and a system of medical inspection in the schools. The ergograph, measuring the mental qualities of pupils, was also adopted at his suggestion.

Donation by Dr. Fenger.—Dr. Christian Fenger recently donated to the library of Rush Medical College a collection of books which represents the German surgical literature of the last fifty years. There are about five hundred volumes in all.

Seek to Close Opium Dens.—Failure of the Chicago police to do their duty and close all opium dens in the city has led to the filing of sixty-eight cases, alleging violation of the pharmacy law, by the State Board of Pharmacy. Six cases were dismissed in Justice Hall's court because the board's attorney believed it impossible to secure a conviction with the Clark Street juries summoned by the constables.

Physicians' Club.—At a meeting, held November 25th, the subject of the physician as a writer of medical literature was discussed. Dr. G. Frank Lydston spoke on the topic "Should the Physician Write?" He answered the question in the affirmative, saying that persistent writing enables the physician to acquire a knowledge of medicine and surgery which could not be obtained in any other manner. As models of literary style he mentioned the writings of Van Buren and Fothergill. Dr. George H. Simmons pointed out the common faults of the writings of medical authors. Most physicians write too long papers. They should be short, so that editors would be able to present their readers with greater variety of topics. Long articles are only read by about one per cent. of the readers. Many papers bristle with unnecessary details. Meaningless titles were dwelt upon and examples given, as, for instance, "interesting report of surgical cases," "a few surgical problems," etc. He urged the use of central and side headlines to guide the reader. Probably three-fourths of all papers prepared for reading before medical societies are written to satisfy the Secretary. They are, therefore, prepared hurriedly and the subjects are not well thought out. Faults in case-reporting were dwelt upon and illustrations given. Dr. Henry F. Lewis spoke of the medical writer from the standpoint of the reader. The busy practitioner can only read a few medical journals and these should be the best. The medical writer speaks too frequently with an authority that is not his own. There is too much compilation and not enough of the experience and observations of authors embodied in articles. Too much space is devoted to what this and that man have said regarding a certain subject. This is unnecessary, as those interested can look up the literature themselves. Articles are not sufficiently concise. Greater condensation is necessary. The average writer consumes too much time and space with prefatory observations, or long, verbose introductories. Brevity, without vagueness, is desired. Subjects should be well divided; there should be a liberal use of central and side headlines, so that the reader can skip paragraphs here and there, if necessary. Dr. George F. Butler spoke on how to write well. A prerequisite to writing well is to think well. He cited a few instances of eminent authors with the definite purpose of showing that association with great minds, through a diligent perusal of their work, will be found the surest means of acquiring the art of logical, refined, and cultivated expression. Newspaper editorials are fully equal in style to the best magazine literature, particularly those written for the great dailies, in that they were examples of concise, logical, reasoning, combined with discriminating observation of the leading events of the day.

New State Sanitarium.—A State sanitarium for consumptives will be one of the recommendations made by the State Board of Health in its forthcoming biennial report. The Board also will join with the State Board of Charities in favoring a provision for the especial care of epileptics. The Health Board will ask that the powers of township boards be extended so that they will have the power to punish persons violating rules tending to check the spread of contagious diseases. It will also recommend legislation providing for boards of health in counties not under township organization, where the State

Board now exercises local jurisdiction. An examination for funeral directors, embalmers, and undertakers will be held by the State Board in Chicago on December 19th. An examination for physicians, midwives, and other practitioners will be held in Chicago on January 9, 10 and 11, 1901.

Cook County Hospital.—The *Chicago Tribune* comments as follows on the county hospital situation: "Perhaps sufficient evidence has not been submitted to the public to convince everybody that the administration of the County Hospital has been inefficient and unworthy during recent years. There is, however, a general impression, which is only too well justified, that the hospital has been run as a political rather than as a charitable institution and that the public service will be promoted by a refusal to reappoint the present warden. This being the case, the new President of the County Board, who has the appointing of the warden and the heads of other important county institutions, should perform the duty of making these appointments with care and circumspection. He should not appoint men who are pressed on him by politicians, through whom they hope to get control of the county institutions. He should select men of character, experience, and independence, who will administer the affairs of the hospital, for instance, in such a manner that the patients may be well cared for, while the funds of the county are not squandered. The man who will fill the hospital, the insane asylum, or the poorhouse with political bummers and favorites, who assists in putting through contracts of a dubious nature, or who accepts supplies when they are not what the contracts call for as to quantity or quality, is not the kind of man the taxpayers want or the President of the County Board should appoint. There should be at the head of such an institution as the County Hospital a man possessing absolute integrity and also sufficient intelligence to insure honesty in subordinates. He should make it his special duty to see that the patients get their rights, that the medical and nursing staffs are efficient in all respects, and that the business affairs of the hospital are managed as economically and carefully as are those of a commercial establishment, thus safeguarding the interests of the taxpayers. If the President of the County Board will take his time he can discover such a man—a man who will be the catspaw of no politician, and in whom the citizens of Cook County will have perfect confidence."

GENERAL.

St. Louis Medical Society.—At the last meeting, held December 1st, Dr. Hugo Summa read a paper on "The Floating Tenth Rib and Its Diagnostic Value."

Western Surgical and Gynecological Association.—The next annual meeting of this Association will be held at Minneapolis, Minn., December 27 and 28, 1900. An invitation is extended to surgeons and gynecologists of the Great West to attend this meeting and take part in its deliberations. As the meeting is to be held during the Christmas holidays those engaged in teaching in the medical schools will be able to attend without interfering with their college duties. The preliminary program suggests an interesting and full meeting.

Training School for Nurses, Freedmen's Hospital.—The United States Civil Service Commission invites attention to newspaper announcement issued November 23d for an examination for the position of Superintendent and Head Nurse, to be held December 19-20, 1900, and calls attention to the fact that the Department desires that preference in certification be given to unmarried women between twenty-five and fifty years of age, instead of between twenty and twenty-five years of age.

Cheyenne's Water Tainted.—Cheyenne, Wyoming, has had an epidemic of typhoid fever for several weeks, and the citizens have been at work to locate the cause. A report shows that the water supply of the city is contaminated with typhoid bacteria. In one instance no less than four masses of refuse were located near the filter-bed, and one of them directly over it.

Honor to Dr. Halsted.—Dr. W. S. Halsted, Yale, '74, of Johns Hopkins University, and formerly of New York City, has been elected as honorary fellow of the Royal College of Surgeons, London.

Smallpox in a Michigan City.—According to Secretary Baker of the State Board of Health, who was called to Winona to investigate the epidemic in that city, the disease is evidently smallpox of a mild character and the mortality about 2 per cent. It is said that there are over three hundred cases, mostly in the Fourth Ward, which is largely a Polish settlement.

Faith Curists Held for Murder.—Elder Eugene Brooks of the branch of the Dowie Zionites of Victoria, B. C., and W. W. Maltby, a disciple, were arrested last week in that city at the close of an inquest held regarding the death of Maltby's three-year-old child from diphtheria. The two are charged with murder.

Yale Medical School.—The plans for extension of the Medical School and its transfer to Cedar Street opposite the New Haven Hospital, where all the needed front has just been acquired, are now being actively pushed. If present hopes are realized, a few years more will find the school in its new quarters and rapidly regaining the importance which it had in the early part of the century. The first step will be the removal of the dispensary to Cedar Street.

Entrance to Medical School Raised.—At the monthly meeting of the Board of Regents of the University of Michigan it was decided to

raise the requirement for entrance to the medical department; that practically a two-year course in the literary department will be required for admission. Heretofore the same grade of entrance examinations has prevailed for both departments, and, as a consequence, a number of inadequately prepared students have slipped in who later have made a failure of their work in the school of medicine.

Cancer in London.—London medical science is being directed toward the elucidation of the problem of the causation of cancer. A cancer research laboratory has just been opened at the Middlesex Hospital, to be entirely devoted to the systematic investigation of cancer. The Middlesex Hospital is alone among the great London hospitals in admitting inoperable cases of disease, where the only hope is that death may come without much more pain. Some sixty of these hopeless cases will be now under close scientific scrutiny.

Michigan Smallpox Grave.—The smallpox situation in the upper peninsula is quite serious, in view of the fact that lumbermen ill with the disease come into the city hospitals laboring under the impression that they have some trifling ailment. Most of the outbreaks have resulted from such cases, many persons being exposed on railroad trains and in other public places.

Woman's Medical Club.—A Woman's Medical Club has recently been formed in suburban New Jersey, which limits its membership to women who are regular physicians, the qualifying adjective being strictly adhered to. The object of the club is mutual helpfulness, and the discussion of medical questions, as well as the promotion of sociability among women physicians throughout the State. Fifteen members were enrolled at the first meeting, including representatives from the Oranges and Newark, Jersey City, Montclair and Roselle. The officers are: President, Dr. Katherine Porter, Orange; Recording Secretary, Dr. Mary D. Hussey; Corresponding Secretary, Dr. Isabel M. Geddes of Newark; Treasurer, Dr. Augusta M. Madison.

Pan-American Medical Congress.—The "Morro Castle" will leave New York December 22d and will be back in ten days, three days down, four days in Havana, and two days back; price of the trip $60. The hotels in Havana are as follows: Telegrafo, Mascotte, Ingleterra, Pasje, and Roma; rates from three to five dollars a day, everything included. Trip from New York and return, including passage, hotel, meals and all, $80. As regards the reports that yellow fever is prevalent in Havana, the following communication to the *New York Times* from Dr. Juan Santos Fernandez, President of the Congress, may be of interest: "It is very necessary for the success of the third Pan-American Medical Congress, which is to be in session in Havana, Cuba, the 26th, 27th, 28th, and 29th of December, 1900, that the physicians of the United States should be informed that yellow fever disappears or is very rare in this city at that season, and that already the number of cases have greatly diminished, therefore there is no occasion for fear on their part in coming to Cuba in the latter part of December."

Arsenic Poisoning in Manchester.—The situation at Manchester seems more grave than last week's report in the MEDICAL NEWS would indicate. The victims of arsenic poison in beer now number more than sixty dead and more than one thousand ill. The area affected is confined within a hundred-mile radius from Manchester, but the panic among beer-drinkers has spread almost throughout the whole country. It has been completely established that the cause of the poisoning is arsenic in the sulphuric acid used in the manufacture of glucose or sugar which the English brewers employ in place of malt and hops in making cheap beer. The poison has thus far been traced to only one establishment which supplied sugar for several breweries in the Midlands and the north. The commercial sulphuric acid in this country is made from pyrites, almost all of which come from Spain. There is always a trace of arsenic in it. The offending firm argues that there must have been an undue proportion of the poison in the lode from which their supply came. At all events, an analysis shows that some beers sold in saloons this week contain arsenic sufficient to kill any persistent drinker. As a result of the warning of the authorities hundreds of thousands of gallons of beer have been poured into the sewers of Liverpool and Manchester by brewers and retailers. The scare has caused a strong revival of the agitation in favor of the compulsory use of malt and hops instead of cheaper substitutes. A Government inquiry will probably be ordered and it is likely that the subject will secure the attention of Parliament.

In the Learned Professions.— The Bureau of Statistics of Labor of Massachusetts issued December 1st an analysis regarding the learned professions in Massachusetts, the like of which has never been published before. The figures are those of the last State census of 1895, but they are doubtless about equally applicable to to-day. The classification under the head of religion includes such persons in the service of religion as sextons, superintendents of cemeteries, secretaries of religious societies, and others not strictly clerical. The legal profession is stretched to include not only lawyers, but clerks and officers of courts, justices, conveyancers, notaries, and solicitors. Under the head of medicine are included physicians and surgeons of the different schools, chiropodists, clairvoyant medical practitioners, dentists, manicures, and midwives. Including these, there are in the service of religion 4597 persons in the State, 2781 engaged in the legal profession, and 5800 in the practice of medicine. Dividing the total population by these figures, it appears that there is one religious

worker for every 544 persons in the State, one legal light for every 899 persons, and one medical practitioner for every 431.

There is a great difference between different localities regarding the proportion of these persons. Suffolk County, which includes Boston, Chelsea, Revere, and Winthrop, but consists largely of Boston, has 1245 in the service of religion, 909 in the service of law, and 1886 in the service of medicine. This is all out of proportion to the remainder of the State, showing how professional people crowd to the large centers. In Suffolk there is an average of one person in religious service for every 434 persons, one in law to every 594 persons, and one in medicine for every 286 persons. This shows that there must be a remarkable excess of doctors in Boston, for the proportion nearest to this is 377 in Nantucket County, and next is 431 in Hampden. In Boston alone there is one religious service to every 415 of population, one to 576 in law, and one to 278 in medicine.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, November 28, 1900.

THE STRUGGLE BETWEEN THE STAFF AND BOARD AT THE NATIONAL HOSPITAL FOR THE PARALYZED AND EPILEPTIC—THE HOSPITALS COMMISSION—CLOSE OF THE INQUIRY—EVIDENCE OF MRS. RICHARD CHAMBERLAIN—SIR MICHAEL FOSTER ON MEDICAL EDUCATION—DEFECTS OF THE GREAT LONDON HOSPITALS—WANT OF LABORATORY FACILITIES FOR THE INVESTIGATION OF DISEASE—HEALTH OF KIMBERLEY DURING THE SIEGE—TOBACCO IN WARFARE.

The controversy between the staff and the board or rather the secretary-director (for the board appears to be a one-man power) of the National Hospital for the Paralyzed and Epileptic still continues to be waged hotly in the columns of the *Times*. The board has passed a resolution that "In view of the publications in the press injurious to the interests of the hospital an inquiry should be held into the charges formulated by the staff against the domestic condition and management of the hospital and that some independent legal authority be requested to conduct such inquiry." The staff point out that possibly it is the board's intention to limit the inquiry to domestic matters, while their demand was for an inquiry into the constitution and management of the hospital. If the board intends to so limit the inquiry the staff will decline to be party to it. The domestic condition of the hospital is only a part of their charges. They further point out that the board being one party in the dispute are scarcely in the position to nominate their own tribunal, that the constitution of the hospital is so faulty that the staff while giving gratuitous services is disfranchised, that a paid official whose position in similar institutions is a subordinate one has gradually been allowed to assume an anomalous position, and that by his interposition as middleman between the board and staff harmonious and useful cooperation between these two bodies has become impossible. The staff, therefore, seeks direct representation on the board as the only means of arriving at a better understanding with them. In spite of the lengthy correspondence on the subject no proper reasons have ever been given why the demand for two seats by the staff on a board of twelve has been refused. The following are the reasons assigned: "The staff being officers and servants of the hospital should not be included in the governing body. They are charged with duties and questions relating to their discharge may arise. The independence of the board would disappear in the company of members of the staff. The claims of mere suffering would be overlooked and preference given to 'cases'. Though the members of the staff would only number two they would always speak with the whole force of their own medical committee and by threatening hostilities could always enforce their views." In a medical journal there is no need to reply to these silly arguments. The most weighty document which has appeared on this question is a letter in the *Times* signed by Lord Lister and the senior surgeons and physicians of all the hospitals in London having more than 100 beds, and by other medical leaders. It urges the governors to put an end to the controversy by granting the representation asked for which can only strengthen the board of management in wisely carrying out the great charitable work entrusted to it.

The Hospitals Commission which has returned from South Africa has held its last sitting in London. The only witness examined was Mrs. Richard Chamberlain, sister-in-law of the Colonial Secretary. She said that she had visited several hospitals, but considered herself an authority on only one, No. 1 Hospital at Wynberg, Cape Town. She was politely told on three occasions that no visitors were allowed. She ultimately got an order to visit from General Walker. Permission was given for three days a week, but she went every day. The whole place was in a horrible muddle. There was no organization and though money and stores were unlimited the place did not look like it. Proper convoys were not provided to bring patients from the station to the hospital. The typhoid were not separated from the surgical cases. Everything was short—splints and every necessary utensil from cups and saucers to bedpans. There were not sufficient air-cushions, air-beds, or hot-water bottles. Nurses were deficient although Cape Town was full of them. The patients were

dirty because there was not sufficient warm water to keep them clean. The military huts were swarming with vermin. The orderlies take the sheets of typhoid patients, wash them in cold water, dry them, and use them again without disinfection.

Sir Michael Foster, M.P., Professor of Physiology in the University of Cambridge, distributed the prizes to the students of St. George's Hospital Medical School and delivered an address on Medical Education. He said that he was oppressed by the thought that the opportunities offered by the great hospitals for the advance of medical knowledge were not adequately laid hold of. Complaints were made by the public that hospitals were used for "experiments." But this was mere kicking against the pricks. Whenever a patient placed himself in the hands of a physician his case became the subject of investigation. Every touch of the surgeon and every counsel of the physician was necessarily an experiment, for the result was never absolutely certain and the practitioner was always prepared to profit by the teaching of that result. These two characters were the essence of a scientific experiment. He complained that in our great hospitals the teachings of those multitudinous experiments were not laid hold of as completely and as fully as they might be. The analysis of the phenomena at the bedside and in the post-mortem room was not carried out as exactly, as completely, as fully and as systematically as it might be. In none of our great hospitals was the chemical, physical and bacteriological analysis of cases as complete as it should be. In the great metropolis of London the hospitals were not so well equipped for these purposes as in America and on the Continent or even in the English provinces.

The annual report of the Medical Officer of Health of Kimberley for 1899 is an interesting document. The report says that the chief feature which influenced the health of the town during the year was the state of war of the last two and a half months. The siege continued until the middle of February of the present year. For the part of the division of Kimberley which was in the enemy's hands the medical officer is unable to give statistics. But he states that among the enemy encamped at Magersfontein and at the various stations and trenches round Kimberley there is abundant evidence that enteric fever was very prevalent. During the few weeks preceding the siege there was an abundant influx of refugees from Johannesburg and elsewhere causing crowding in the dwellings. The exigencies of war and the restrictions under which the besieged were placed caused a marked increase in the death-rate. During the first nine months of the year the health of the town was good and compares favorably with other years and with other towns in the colony. The population was 163,000 whites and 23,200 colored. The death-rate for the first nine months was only 17 per 1000. But for the entire year it was 42.6, which shows the tremendous effect of the siege. It was amongst the young children who are most easily influenced by adverse circumstances and who therefore furnish a delicate index of public health that the death-rate was phenomenally high. For the year ending June 30, 1890, 348 colored infants per 1000 registered births and 304 Europeans died.

The war, says the *Lancet,* has taught many things. Perhaps nothing has been more demonstrated than the important part played by tobacco in the soldier's existence. The Duke of Wellington's armies had no tobacco worth speaking of. If they did not forbid it, the officers were directed to advise their men strongly against its use. This curiously contrasts with the campaigning in South Africa where marches and privations as long and as stern as any suffered by our great-grandfathers were borne with a grumble only when the "smokes" failed the men. No doubt tobacco is a real help to men enduring long labors and receiving little food. It probably acts by quieting cerebration and allowing sleep more easily. Its value seems to be second only to food when long privations and exertions have to be endured.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

ILEOSIGMOIDOSTOMY AND LATERAL ENTERO-ENTEROSTOMY FOR CANCER—URETERAL CATHETERISM FOR TUBERCULOSIS—DIFFUSE TRAUMATIC POSTERIOR TIBIAL ANEURISM—ENTERITIS AND ENVIRONMENT—PNEUMOCOCCI AND SORE THROAT—SCARLATINOUS SORE THROAT—PNEUMOCOCCUS OTITIS MEDIA—AMYOTROPHY OF THE NECK IN PULMONARY TUBERCULOSIS—SIMPLE ACHOLURIC JAUNDICE—DIAGNOSIS OF TUBERCULOUS MENINGITIS—SPLENIC DEGENERATION IN TUBERCULOSIS—JAUNDICE AND THE CEREBROSPINAL FLUID—PERMEABILITY OF THE MENINGES IN THEIR TUBERCULOUS INFLAMMATIONS—EFFECT OF COCAINE ON CIRCULATION IN LUMBAR INJECTION.

Tuffier at the Société de Chirurgie de Paris, October 17, 1900, presented in behalf of Charriers (Angers) notes on a case of colic carcinoma of the hepatic flexure with marked and progressive signs of intestinal obstruction and with adhesions preventing anastomosis between the proximal ascending and the distal transverse colon. An artificial anus was not desirable. Therefore ileosigmoidostomy was done. After a few weeks' trouble with fluid stools, the patient made a good recovery.

Quenu stated that he had done this anastomosis even in patients much emaciated, with entirely good results; no appreciable increase in the failure of nutrition could be attributed to

cutting out most of the colic digestion. His conviction is that this operation is far preferable to an artificial anus, whenever it may be done.

Hartmann, at the session of October 24th, resumed the same subject and limited the term *exclusion of the intestine* to cases in which one or both ends of the portion excluded are closed. Thus the exclusion will be closed or open according as there is or is not an artificial anus formed. For his part he considers this latter form of exclusion should not be carried out when it is possible to do a lateral entero-enterostomy. Another crucial point is the selection of the loops for the anastomosis. In general terms the union should be made with the least possible sacrifice of intestinal function. On the other hand, care must be taken not to place the anastomosis too near the cancer. In his own experience the neoplasm had invaded his union. Often the results of this operation are so marvelous that one may be led to doubt the original diagnosis. In one case of his four months after such an apparently absolute cure, the patient succumbed to a general dissemination of the disease.

Albarran, on October 31st, exhibited a kidney removed from a twenty-year-old youth, interesting solely from the early and accurate diagnosis made. The only symptoms were slight lumbar pain and some frequency of micturition. Cystoscopy was entirely negative. Ureteral catheterism showed clear urine from the right side with eighteen grams of urea to the liter, while twelve grams of slightly purulent urine was recovered from the left side. Nephrotomy at the exploration was negative, but on account of the straightforward diagnosis nephrectomy was done, after which a focus at the inferior pole of the organ was found. In the urine from the left kidney were bodies staining with Ziel's solution and probably tubercle bacilli.

Chaput reported a case of diffuse traumatic posterior tibial aneurism, in two large sacs, upper and lower, spontaneous clotting had occurred so that only the proximal opening of the vessel into the aneurism was ligated. Silk was used. Probably it would have been far more prudent to have ligated the distal mouth also.

Rendu, at the Société Médicale des Hopitaux, October 19th, introduced a youth recovered from a biliary fever with hemoglobinuria. A year ago in Madagascar he contracted malaria which progressed so steadily that his return to France was advised. Since then, during the month preceding admission, he showed tertian fever and on reaching the hospital was suddenly attacked with a severe exacerbation of fever and, two days later, by another attack less intense, but accompanied by nausea, vomiting and bloody urine. This hematuria persisted all night and was followed by a jaundice even of the mucosæ, with prostration and almost collapse. Chlorhydrate of quinine hypodermically and quinquina powder by mouth were continued and shortly convalescence ensued. The other features were that the urine contained no blood-corpuscles, but only hemoglobin. Its deposits consisted solely of urobiline and chromogen, but no bile-pigment. Evidently this was icterus hemapheic, as described by Gruber. The spleen during the attack was much enlarged, but had entirely returned to normal dimensions. The purely congestive origin of this condition is difficult to explain.

Renon stated that in the Peter Pavilion of the Necker Hospital from July 15 to October 1, 1900, he had seen nine enteric-fever cases with four deaths among nurslings and mothers. In 1899 the mortality in the same department of the institution reached 57 per cent. These large fatalities were not to be attributed to the severity of the disease, because most of the cases had run a mild course; nor to the lactation of the patients, because of three actively nursing women but one died; nor to the peculiarity of the epidemic because the previous year, 1899, had also shown an excessive death-rate in this pavilion, while in the other departments of the hospital it was about 10 per cent. He concluded that the hygiene surroundings are responsible for the condition and that nurslings usually have a high mortality in typhoid fever. It seems evident that not only are the young children vulnerable to this disease, but that notwithstanding all possible precautions the other intestinal disorders of infancy may act as secondary infection, complicate the process and raise the death-rate.

Bezancon said that most of the bacteria which occur on the pharynx and tonsils during an attack of acute non-diphtheritic angina may be found in the mouth and pharynx in health. Their rôle in the pathogenesis of non-diphtheritic inflammations is very difficult to appreciate by modern bacteriological methods. The frequency with which the pneumococcus is found led him to feel that very likely it could be isolated as a potent factor. In company with Griffon he tried the agglutination test upon them carried out by cultivating the germs in the blood-serum of the patient. The results were conclusive, namely, various degrees of bunching from feeble to intense, although the reaction was ephemeral. Such conclusions were in agreement with the clinical picture and the other bacteriological features of the pneumococcus. Furthermore they tend to show the rôle of this germ in affections previously ascribed entirely to the streptococcus and to substantiate the recent utterances of Widal and himself that these affections should be reclassified and some charged to other organisms. No tests as to the streptococcus could be carried out, as no method of making it agglutinate is yet known.

Variot, at the session of October 26th, rehearsed his results due to the systematic daily examination of 525 children afflicted with scarlatina as to various degrees of sore throats. In 150 patients he found the pharyngotonsillitis develop anywhere from the first day to the conva-

lescence without exudate. In the 375 patients remaining the exudate was at times circumscribed and at times progressing or general. In 62 patients out of 102 in whom the false membrane as an entity existed it was impossible to determine clinically whether the cases were true or false diphtheria and only bacteriological examination gave 30 true and 32 pseudodiphtheritic cases. Bourges and Würtz have stated that any membrane appearing at the end or during the convalescence would be pure diphtheria; but these observations have demonstrated to him that the other often occurs in the same manner, namely, pseudodiphtheria. The author always resorts to free serumtherapy as soon as any membrane appears, because that is the moment when the character of the angina may change and a diphtheria be checked. He also examined 423 children relative to any connection between the febrile cycle, the development of the eruption and the appearance of a pharyngotonsillar exudate. In 295 patients all three developed together and were closely related in the rest of the course, in the other 128 children any two appeared to go hand-in-hand overshadowing the third and quite independent of it. But a high fever always accompanied a frank pharyngitis, while a severe cutaneous lesion might or might not show great elevation of temperature. In no case did he find angina preceded by crops of vesicles as Lasègue has claimed.

Hirtz lately observed a case of pneumococcus otitis media bilateralis with free discharge of pus, but very little or no pain, develop in a woman caring for her husband who was suffering from a severe attack of pneumonia. The diagnosis was established by a bacteriological examination of the pus. The source of infection may have been directly from the sputum which the wife had been in the habit of caring for, probably without thorough washing of the hands. It would be well to direct every one so nursing pneumonia patients to disinfect the hands, mouth and throat most carefully.

Boix pointed out the fact that very early in pulmonary tuberculosis there occurs an atrophy of the neck-muscles which constitutes an early contributive diagnostic sign. As in the examination for the tubercle bacillus its absence does not prove absence of the disease, but its presence is almost proof of it. Careful comparison of the two sides of the neck is necessary and the areas affected are *seriatim* supraclavicular, subclavicular and supraspinous regions. The pathogenesis of this amyotrophy is not clear, but may be compared to those which occur about joints, namely, alterations in the nerve filaments of the pleura carried to the spinal cord, perhaps by pure reflex action, by retrograde degeneration or by reaction at a distance.

Lereboullet, at the November 2d meeting, discussed icterus without choluria. His observations were made jointly with Gilbert. The special type investigated was the *simple*, that is, not accompanied by evident affection of either the liver or bile-passages, very commonly seen especially as an hereditary or family manifestation after a generation afflicted with cirrhosis, chronic choleangitis, cholelithiasis or other hepatic or biliary disease. These hereditary tendencies are marked. The typical symptoms are slow indeterminate invasion, jaundice of the skin, often general sometimes partial, no discoloration of the mucosæ, fatigue, malaise, biliary pigments in the blood-serum but not in the urine, and no appreciable signs in the liver itself. Often one may differentiate irregular secondary symptoms like pruritus, urticaria, xanthelasma, etc. The xanthodermia of Besnier is probably this condition. Again, dyspepsia may characterize the disease or neurasthenia, hysteria, hemorrhagia, especially epistaxis and menorrhagia, both leading to anemia simulating chlorosis (*false chlorosis of icteric origin*). The cause of this disease, which corresponds to the "bilious temperament" of older physicians, probably lies in a more or less chronic infection of the bile-passages, accompanied by a cholemia sufficient to pigment the skin, but not the urine. It is ordinarily of absolutely good prognosis, but possibly in those who are specifically so disposed may lead to lithiasis, cirrhosis and other serious disorders of the liver and its ducts. Strict diet with no milk is the sole treatment.

Widal, Sicard and Ravaut, at the Société de Biologie, October 20th, reported further peculiarities of the cephalorachidian fluid in health and various diseases, especially tuberculous meningitis. The cryoscopic point of the fluid in all acute forms of meningitis, no matter how various, oscillated between the extremes 0.56° C. and 0.75° C., the majority of a total of fifteen patients being between 0.60° C. and 0.65° C. The fluid seems to have a hypertonic tendency toward ordinary serum which shows a freezing-point of 0.56° C. In patients with manifest tuberculous meningitis in eight out of ten examined, the point fell to between 0.48° C. and 0.55° C. This fact may become of great diagnostic value.

Raymond and Hulot said that the injection of raw tuberculin gives only an approximate idea of what occurs in the disease. They enclosed active tubercle bacilli in collodion sacs and laid these in the abdominal cavity of animals. By degrees the toxic products of the germs dialyzed through the sac-wall and set up remote effects. Thus was simulated the condition so often present in the human patient when a tuberculous focus poisons the system without circulating the germs. The kidneys were seen to be in the most marked degeneration, although liver, spleen, pancreas and all the other viscera were affected.

Dominici killed three guinea pigs eighteen weeks after inoculation with tuberculosis and examined the spleens histologically. A general degeneration was found in each which he calls myeloid from its close resemblance to bone-marrow.

Gilbert and Gastaigne on November 3d said that they took the cephalorachidian fluid from eighteen patients with icterus and marked cerebronervous symptoms; in fifteen it was normal; in three it showed yellow color and biliary pigments and salts under the Ginelin and Pettenkofer tests. These patients had the most nervous symptoms. It seems possible, therefore, to deny that these symptoms are entirely due to the changes in the fluid, because they are not always mutually concomitant. Why the bile-substances should affect it in some and not in other cases is difficult to explain, unless we assume that in some conditions the membranes otherwise impermeable become permeable. As to the cause of the nervous symptoms, especially the somnolence, in jaundice we have to accept as formerly the presence of bile-products in the blood.

Widal, Sicard and Monod reported that they have found in the normal patient the meninges impermeable to iodide of potassium, whereas in tuberculous disease of these tissues the salt can be recovered from the cerebrospinal fluid. Hence they affirm that this is a third contributive diagnostic point to distinguish this form from others. The previous two differential facts are a change in the freezing-point of the fluid and a specific leucocytosis, namely, lymphocytosis in tuberculosis and polynuclear neutrophile leucocytosis in cerebrospinal inflammation of the membranes.

Hallion and Tuffier have studied in the dog the effect on circulation of cocaine injected by lumbar puncture. Subcutaneous injection always causes universal vasoconstriction with elevation of pressure. In the spinal canal just the reverse is caused, apparently by paralysis of the plexuses of the abdomen, itself due to the intrameningeal paralysis due to the drug. This nerve-depression can be counteracted by irritation of splanchnic nerves, especially by pressure on the abdomen.

SOCIETY PROCEEDINGS.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held November 12, 1900.

J. Blake White, M.D., in the Chair.

Acute Traumatic Malignancy.—This paper was read by Dr. W. B. Coley. In a paper read before the N. Y. Surgical Society in 1897 he said he had expressed his conviction that a large proportion of cases both of sarcoma and carcinoma were of traumatic origin. In that paper it was said that 27 per cent. of the cases observed by him were directly consequent upon injuries. Further experience had confirmed the view then taken. At his request Dr. C. J. Kane had compiled the statistics of the cases of cancer treated at the German Memorial Hospital during the last three years. From these it appeared that in 63 out of 100 cases the disease followed local injury and in 27 irritation of parts affected, and that in only 10 was there not any history of trauma or irritation.

Dr. Coley then cited a number of cases from his own experience. Among them were the following: Male, aged forty-five years; blacksmith. A kick by a horse, causing a simple fracture of the lower end of the femur, was followed in a short time by sarcoma at the seat of injury. Amputation at the hip-joint was followed by an uneventful recovery.—Male, aged twenty-eight years. Early in January, 1900, he received an injury of the right testicle. There followed a rapid swelling of the part, and the patient was twice tapped for supposed hydrocele. In February he was seen by Dr. Coley, who made the diagnosis of hematocele, with possible sarcoma, and operated. Microscopic examination showed round-celled sarcoma. Afterward the patient entered Dr. B. Farquhar Curtis' service at Bellevue Hospital with an abdominal tumor as large as a man's head, and he died on April 18th. This case was remarkable for its rapidity, as only a little more than three months elapsed between the reception of the injury and the fatal result.—Female, aged forty years. Sarcoma of the breast following a blow. Three operations were performed for successive recurrences.—Male, aged five and a half years. An injury of the groin was followed by a spindle-celled sarcoma, which grew with very great rapidity.—Male, aged eighteen years. A brick, falling three stories, struck on the right deltoid muscle. Round-celled sarcoma of the humerus developed and amputation at the shoulder-joint was performed by Dr. George R. Fowler. Very curiously there was a recurrence of the disease in the other humerus.

Out of 100 patients seen by Dr. Coley since the publication of his first paper, in 40 there was a distinct history of trauma and in 8 of local irritation. In 13 the disease developed within one month, and in 8 of the 13 within one week after the injury. In a total of 270 patients the disease was preceded by trauma in 80, or a little more than 31 per cent. In 11.5 per cent. of the cases the disease occurred within one week after the injury. The subject of acute traumatic malignancy is certainly receiving more and more attention from the profession, and it would seem that the old opinion of the laity that cancer follows injuries really has a substantial basis in fact. Beginning with W. Harrison Cripps, who in 1882 found a traumatic origin in only 7 per cent. of cases, Dr. Coley quoted the statistics of various writers, and said that there was undoubtedly sufficient evidence to show a definite history of trauma in a large proportion of cases. Just how the injury acts is as yet an entirely unsettled matter. Most of the German authorities incline to the view of a constitutional diathesis, predisposing to malignancy. Dr. Coley said that his own opinion had not changed. He still felt con-

vinced that such tumors are infectious, or, in other words, of microparasitic origin. Having referred to their analogies to tuberculosis and osteomyelitis, he said it was reasonable to suppose that in many individuals the cancerous micro-organisms exist in a latent state, and that a local injury or irritation has the effect of arousing them into activity. The main conclusions arrived at were as follows: (1) Trauma is a very important factor in the causation of malignant tumors, and (2) this relation appears to afford considerable support to conclusions as to the infectious nature of their growths.

Dr. B. Farquhar Curtis said it was wise to guard against trusting too implicitly to the statements of patients with reference to antecedent injuries. Thus, in cases of cancer of the breast it was generally very easy to get some sort of a history of trauma, but when definite facts as to the injury were wanted such were often very difficult to obtain. It was certainly true that these injuries were more likely to be followed by sarcoma than by carcinoma. Having referred to a case of osteosarcoma in the clavicle, which was followed by a secondary sarcoma of the rib, he said that all these thickenings occurring after contusions of bones are by no means sarcoma. In addition to the hypotheses mentioned by Dr. Coley he suggested another possible method, namely, the effect of the injury in causing a proliferation of cells, a return in a measure to embryonic conditions. In conclusion he referred to two practical points, *viz.*: (1) The effect of this theory of traumatic causation of malignant disease upon accident insurance and on suits for damages. (2) A great many women have tumors of the breast following some accidental injury by a member of their family, but it is advisable not to express too positive an opinion, as this might add to the trouble and distress already existing.

Dr. Fred. Lange was inclined to accept Dr. Coley's view of the parasitic nature of the disease, and thought that more extended experiments should be carried on for the purpose of establishing or disproving the hypothesis. At the present time there was not enough uniformity among pathologists to permit of positive statements.

Dr. Louis Heitzmann took issue on this point, and said that all the micro-organisms which had from time to time been adduced as the etiological factors in the production of malignant growths had been disproved. To him the return of the cells to an embryonic condition, as referred to by Dr. Curtis, offered a much more satisfactory explanation.

Dr. Coley said that this was a great problem which would require the combined efforts of many observers to solve. The claims put forth by San Felice, Roswell Park, Lephold and others had not been disproved, while, according to Edwin Klebs, the embryonic theory of Cohnheim was no longer tenable.

BOOK REVIEWS.

A Practical Treatise on Medical Diagnosis. For Students and Practitioners. By JOHN H. MUSSER, M.D., Professor of Clinical Medicine in the University of Pennsylvania; Physician to the Philadelphia and the Presbyterian Hospitals; Consulting Physician to the Woman's Hospital of Philadelphia and to the West Philadelphia Hospital for Women. Fourth Edition. Lea Brothers & Co., Philadelphia and New York.

VIEWED from the standpoint of posterity there is no doubt that the present time will be regarded as a notable epoch in the history of medicine and that the last few years will be deemed to have been as productive of real advance as any period of the immediate or more remote past. For, while we cannot, perhaps, point to any single invention or discovery as epoch-making, for example, as the achievements of Jenner in practice, or Laennec in diagnosis, it cannot be disputed that our general attitude toward the recognition and treatment of disease has lately been so markedly modified and the practice of medicine so completely lifted from the domain of empiricism to something at least approaching an exact science that we may justly claim for our day the same deference and gratitude that we accord to the age that gave us vaccination and the stethoscope. But the ability to profit by the work of the investigators who are daily enriching our knowledge in their special departments is to be gained only by a scientific education of a breadth undreamt of by our fathers and the clinician of to-day must not only be a practitioner of medicine in the older sense, but also be an expert microscopist, bacteriologist, pathologist and chemist as well

This increased complexity of the art is being recognized and well met by our medical colleges whose graduates are for the most part turned out equipped to pursue their investigations in any field of scientific inquiry that seems likely to be helpful in solving the problems of daily practice, but there is still the huge class of general practitioners who are too busy to take up postgraduate courses or spend their time culling from the literature the information likely to be of practical value. It is especially for these that this book should be of inestimable value and that it has been appreciated is shown by the appearance of this the fourth edition only six years after the publication of the first. In the author's words, "Instruments and methods of precision, physical, chemical, microscopical and biological, are now so readily at the command of every practitioner that he is legally, as well as morally, bound to exhibit in his diagnosis and treatment a degree of certainty far greater than could formerly have been exacted," and it is precisely the various methods and appliances by which such accuracy is to be attained that are detailed

with a clearness and completeness surely never surpassed in any manual of the sort. The author has combined in a single volume a description of the laboratory methods and technic required, with beautifully clear and logical discussions of the bedside work and physical signs. After an introductory chapter the first part of the book on general diagnosis is divided into the data obtained by inquiry; the data obtained by observation; a full discussion of the examination of that tissue which now bears the *crux* of nearly every difficult diagnosis, *viz.*, the blood; and a section on the morbid processes and their symptomatology. Part II. on special diagnosis considers the nose and larynx; diseases of the lungs and pleuræ; diseases of the heart, the blood-vessels and the mediastinum; diseases of the mouth, fauces, pharynx and esophagus; diseases of the stomach, intestines and peritoneum; diseases of the liver, spleen and pancreas; diseases of the kidneys; and, finally, an admirable section on the diseases of the nervous system which is calculated to do away with much of the feeling of hopeless confusion with which they are usually regarded by the general practitioner. This edition has been completely revised and in part rewritten with the addition of many new illustrations and is in all important particulars so perfect that it is surprising to note how many misprints have been allowed to stand all through the book, such as "otitis" for "ostitis" on page 85, "palpation" for "palpitation" on page 88, "inquiry" for "injury" on page 49, and the omission of the word "not" from the fifth line of page 47, whereby the author's very obvious meaning is exactly reversed; while on page 385 in the very complete list of diseases accompanied by eosinophilia we find no mention of bronchial asthma or the helminthiases. The illustrations throughout are of unequaled beauty and clearness, the elaborate set of plates illustrating the physical signs in disease of the chest and abdomen being of especial interest and value. Indeed, considered from every standpoint, that of subject-matter, style, and mechanical excellence, the work deserves only praise of the highest order, and there is hardly a student or practitioner in the country who would not find it an invaluable reference-book for daily use.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D. Volume III. September, 1900. Philadelphia and New York: Lea Brothers & Co, 1900.

The present volume of "Progressive Medicine" contains the review of the recent literature of Diseases of the Thorax and Its Viscera, by William Ewart, Physician to and Joint Lecturer on Medicine at St. George's Hospital, London; of Diseases of the Skin, by Henry W. Stelwagon, M.D., Clinical Professor of Skin Diseases in Jefferson Medical College, Philadelphia; of Diseases of the Nervous System, by William G. Spiller, M.D., Professor of Neurology in the Philadelphia Polyclinic, and of Obstetrics by Richard C. Norris, M.D., Instructor in Obstetrics in the University of Pennsylvania. The names of the reviewers constitute the best possible guarantee that nothing of practical importance in the recent literature of these subjects has escaped notice.

The article on diseases of the chest comes very opportunely for the season of the year when respiratory affections are most frequent. It is the custom to think that there is practically nothing new in the old subject of thoracic diseases. A glance at the present volume, however, shows that suggestive advances, practical and helpful, are constantly being made. We note in passing typhoid pneumonia, for instance, which has lately been raised to the dignity of an independent symptom-complex. Abram's aids to the diagnosis of pleural friction are interesting. Three maneuvers are practised to bring out the pleuritic murmur: (1) The extended arm is raised to the side of the head; (2) the patient lies on the affected side for one or two minutes and then rises quickly while holding the breath. Friction if present will be intensified owing to closer pleural contact in a collapsed thorax; (3) the intercostal pressure maneuver, the buttoned rod of the phonendoscope fitted into an ordinary chest-piece, is pressed firmly into the intercostal space. Dorsal percussion and percussion of the spine are subjects in which a certain amount of progress has been made quite recently and the advances are of great interest to the practitioner who wishes to be exact in diagnosis. The use of the good old-fashioned poultice has threatened to go out entirely. Certain hints as to its indications and the method of preparation are given in the present volume which show that it still deserves a place in the therapeutic armamentarium.

In the chapter on diseases of the nervous system Dr. Spiller says: "Probably no organic affection of the nervous system is more common or has been better studied than hemiplegia, and yet the subject still offers much opportunity for investigation. Even those who have seen many cases of unilateral paralysis of rapid development find it difficult at times to determine the cause of the paralysis." Dr. Spiller's words are well calculated to encourage more careful study of hemiplegic conditions and are especially suggestive for the general practitioner who sees so many cases of this affection. In the question of the surgical treatment of brain tumor Dr. Spiller calls attention to a case in which operation showed the presence of an infiltrating glioma which could not be removed. The opening in the skull that remained after the operation gave the tumor a chance to expand in its growth until it formed nearly as large an extracranial mass as the man's head. Undoubtedly the relief of intracranial pressure thus afforded saved the patient great pain and prolonged his life.

Dr. Norris in his review of obstetrics begins with an abstract from an article on parturition

among the Eskimos. These women are delivered when alone and at a distance from any habitation. It is considered unclean for them to remain any length of time where the child is born. The mother drags herself at once some distance, often over snow and ice. Despite the rigorous conditions the rate of mortality for both mother and babe compares favorably with the death-rate in more civilized communities. The story surely emphasizes the importance of as little obstetrical interference as possible.

A Dictionary of Medical Science. By Robley Dunglison, M.D., LL.D. Twenty-second Edition. With Appendix, thoroughly Revised and Greatly Enlarged. By Richard J. Dunglison, A.M., M.D. Lea Brothers & Co., Philadelphia and New York.

The Students Medical Dictionary. By George M. Gould, A.M., M.D. Thirteenth Edition. P. Blakiston, Son & Co,, Philadelphia.

The American Illustrated Medical Dictionary. By W. A. Newman Dorland, A.M., M.D. W. B. Saunders & Company, Philadelphia and London.

A deluge in lexicography threatens to overwhelm the medical world. During the past year four or five medical dictionaries have appeared from different publishers.

The veteran Dunglison still leads the van with its twenty-second edition. Gould's dictionary is now in its thirteenth edition, while Dorland's is a new claimant for honor.

The first is the same solid standard work, but with a really valuable appendix that brings it up to the vocabulary of the century, and the last is a work on a more modern plan, well bound and well illustrated.

The only drawback to Dunglison's dictionary is the hybrid nature that arises from keeping old and disused terms in the body of the work, and the newer terms in the appendix; and yet the classification on such a plan makes an interesting comment on the advance of medicine since the main portion of the work was published. As an illustration of the rapidity with which new words are coined to express accurately the advances in science, we note that this twenty-second edition contains fifteen thousand words over and above those in the twenty-first edition published seven years ago. When we remember that five thousand words suffice the average man for polite conversation, and that Shakespeare's vocabulary, the largest in the English language, numbered but fifteen thousand, it is rather appalling to learn that the doctor's word centers must respond to this extra strain.

In the present edition, the subject of bacteriology naturally claims a large proportion of the increase; and so accurately has its terminology been handled that it may be regarded as, for the time being, complete. The recent discoveries in new drugs and chemical combinations have also added a vast number of words in the subject of therapeutics and materia medica. The difficulty of keeping pace with this subject may be appreciated when one remembers that during the last three years twelve hundred new medicines, or compounds have been manufactured and named.

Those who are familiar with Dr. Gould's dictionary will find few changes in the new edition except in the eponymic terms, and those that the last few years have brought into universal use.

The American Illustrated Medical Dictionary by Dorland has the very valuable recommendation of a convenient size. It can be pulled from its shelf and replaced by a wrist movement, involving no particular use of brawn; therefore a man will consult it perhaps twice as often as a dictionary that monopolizes a whole table. Moreover, it has flexible covers, and clear print, with an excellent page arrangement. It is concise in its definitions, but not abridged. It contains all the newest established words of the present, without being cumbered by relics. Its illustrations are excellent, and its tables of tests, staining methods, methods of treatment, etc., will be of value to the busy man, who can in a second lay his hand on any formula he wants.

Text-Book of Practical Medicine. By Dr. W. Gilman Thompson. 8vo. Illustrated. Philadelphia and New York: Lea Brothers & Co.

The title of this new work on medicine challenges attention. It is "Practical Medicine"—not the "Practice of Medicine." It is as if this eminent exponent of rational therapeutics and of scientific dietetics had thus publicly recalled the members of our profession to the first duty of the physician, the cure of the sick.

The work is divided into nine parts. In Part I. three hundred and fifty-six pages are given to a full and up-to-date discussion of infectious diseases. In Part IX. those diseases which cannot be classified either as infectious diseases or as distinctively belonging to any single physiological system, and the effects of poison and of parasites require one hundred and twenty-five pages for their consideration. The intervening parts are given to the systemic diseases. This classification is as good as any and is perhaps the best now possible. To illustrate in how much this classification differs practically from that of quite recent works, it is but necessary to observe that rheumatism is included in the infectious diseases, rheumatoid arthritis is classed with nervous diseases, and gout is treated in Part IX., under the heading of miscellaneous diseases.

In these thousand printed pages the author has presented in vigorous and easily-flowing English the rich harvest of his ripe experience as physician and teacher. There is everywhere ample evidence of accurate observation, profound scholarship and rare good judgment. There is no slighting of accurate and luminous description of the various manifestations of diseases. There is not missed any of the very latest discoveries in the etiology of diseases. There is no minimizing

of the importance of an early and sure diagnosis, and no lack of a complete consideration of the difficulties in diagnosis and of the means by which an accurate diagnosis may be made. There is no "cut and dried" therapy—no list of formulæ properly labeled with the names of the diseases for which they are supposed to be invaluable, but in a direct and most satisfying manner, yet without dogmatism, he has given in sufficient detail the exact method of treatment that has commended itself to his judgment and his experience. We do not need to say of him, as was recently said of an eminent author by a teacher of medicine to his class, "Really, gentlemen, Dr. ——— is a much better physician at the bedside than his book would lead you to suppose."

It is impossible for any work on so great a subject to appear perfect to every reader. Some who will be pleased to see due credit given to the many recent discoverers in the various fields presented by the etiology, diagnosis and therapeutics of infectious diseases will be sorry to miss notice of the work of Williams in developing the use of the fluoroscope in the diagnosis of "incipient" tuberculosis of the lungs; a method which in the hands of experts is so refined that Trudeau considers it even more sure in early diagnosis than is the use of tuberculin. One might wish that the experimental work of that Russian investigator, who has given the most reasonable explanation of the effect of laparotomy in the cure of tubercular peritonitis had been referred to. In the discussion of aneurism, which is exceptionally well done, there is no reference to aneurism of the pulmonary arteries, a condition which, though rare, has been seen by the writer and confirmed by autopsy very recently. Some close student of dietetics will wonder why in the treatment of gout it is recommended "to aid the elimination of waste," while in the treatment of acute gout all the meat broths are prescribed as suitable diet, which, if Masterson and Samby are not wrong, have "a chemical composition closely resembling that of urine" and must, therefore, of a certainty, add to the embarrassment of the eliminating organs. Some will doubtless criticise the early permission of solid food in typhoid fever, and will agree with the writer that it is safer to forbid solid food until the temperature has been normal for ten days. But the criticisms of omission or commission in this work which can be made by the honest reader are very few indeed.

The work of the publishers is commendable. The paper is good if rather thick. The type is large and new and clean-cut, and the judicious use of heavier letters in headings aids materially in rapid reference and in the analysis of each subject. The few illustrations are well done, and are used to show graphically what words cannot so easily convey.

It is confidently predicted that this volume will meet with a hearty reception and that it will still farther enhance the already high opinion the profession has of the author.

A Practical Treatise on Genito-Urinary and Venereal Diseases and Syphilis. By Robert W. Taylor, A.M., M.D., Clinical Professor of Venereal Diseases in the College of Physicians and Surgeons, New York. Lea Brothers & Co., Philadelphia and New York.

In this, which is in reality a thoroughly revised or new edition of Dr. Taylor's well-known book, the author has included the affections of the genito-urinary organs, thus giving to the profession a standard, authoritative, and thoroughly up-to-date work on genito-urinary diseases, venereal diseases and syphilis; the original volume having been completely rewritten and revised throughout.

The author has accomplished the difficult task of presenting these subjects concisely and at the same time of omitting nothing relating to these diseases, which are all of them presented in such a clear, practical and comprehensive manner as to appeal equally to the practitioner, the specialist and student, all of whom will gain much new and useful information from a careful reading of this valuable work. The general arrangement and classification of subjects is a new and happy departure, the writer possessing the faculty of making important conditions and diseases prominent, and of relegating unimportant and infrequently encountered ones to the background.

The various methods of diagnosis and treatment for these affections are given in great detail, and, while distinctly conservative, are thoroughly modern and up to date in every respect, the author basing his observations upon pathological facts, together with a large and scientifically observed clinical experience; so that after a careful reading of these pages the physician will find himself thoroughly equipped to make proper examinations and accurate diagnoses, and also to treat these diseased conditions in a most approved and scientific manner, the author having succeeded in giving this information in an interesting, terse and convincing manner. As a safe and standard guide for workers and students in this department of medicine, Dr. Taylor's latest work, like his older ones, is by far the best as yet published in the English language.

The publishers deserve great praise for the general superiority of the book, as to type, paper and workmanship, and also the excellence of the innumerable illustrations.

A Text-Book of Medical Treatment of Diseases and Symptoms. By Nestor Tirard, M.D., F.R.C.P., Professor of Principles and Practice of Medicine, King's College, London. Lea Brothers & Co., Philadelphia and New York.

In this period of transition and uncertainty regarding the pathology of disease and the consequent skepticism in reference to the efficiency of drugs, it would seem at first glance to require no little courage to father a treatise on medical

treatment. With a proper appreciation, however, of the limited indication for the use of drugs and a realization of the broad application of hygiene and dietetics in the management of patients the field of therapeusis opens and the uncertainties give place to positive conviction and statement. In the book before us it is evident that the author has clearly perceived this aspect of the situation and reckoned with it in the elaboration of his subject. A certain limited number of drugs are specific in their effect, a large number are curative and a still greater number meet and control symptoms. These have discriminating consideration at the hands of our author in the management of disease, or, perhaps we should say, the management of patients, for it is from this standpoint that the book is written.

All the pathologic conditions that flesh is heir to except those strictly surgical are discussed. The author shows a nice appreciation of the limitations of medicine in indicating at what stage certain diseases become surgical and demand operative interference. The discussion of this point in connection with appendicitis, gall-stones, and nephritic colic, indicates a broad and unprejudiced mind.

We could have wished that the author had set forth with greater emphasis his conviction regarding the specific qualities of diphtheria antitoxin. In diphtheritic invasion antitoxin is the "paramount issue," the position of which has been settled as definitely as the gold standard in finance. In tetanus, too, antitoxin is the sheet anchor and the necessity of its early application demands positive, mandatory advice. The chapters on pneumonia and typhoid fever are full of judicious suggestion, safe guides in these critical and trying diseases. The pathology and the complications are discussed sufficiently to indicate the *rationale* of the treatment and so appeal to the intelligence and reasoning faculties of the student rather than to his sheer force of memory.

The style of the author is clear and attractive, and the work of the publishers unassailable. The book will prove of great value to the senior student, the young practitioner, and the general practitioner, and full of suggestion to the learned consultant—an exhaustive yet concise, up-to-date exposition of modern therapeusis.

Obstetrics. A Manual for Students and Practitioners. By David James Evans. Lea Brothers & Co., Philadelphia and New York.

This is one of a series of pocket text-books of that kind which students use so much. The book is divided into ten parts, treating, respectively, of menstruation, pregnancy (normal), obstetric anatomy, mechanism and course of normal labor, management of normal labor, the puerperal state, pathology of pregnancy, pathology of labor, pathology of the puerperal period, and obstetric operations. More space has been given to normal labor and the more frequent complications than to the rarer conditions and more difficult operations. The physiology and pathology of the newborn have been omitted.

The author has presented the subject in a very clear and concise manner and the book cannot fail to be of help to the student. The book is well illustrated, some of the engravings being new and in colors, and printed upon very good paper.

Suggestions to Medical Writers. By George M. Gould, A.M., M.D. Philadelphia: Philadelphia Medical Publishing Company.

It was a good deed of Dr. Gould to write "Suggestions to Medical Writers." The work must have been brought forth in throes, for he can undoubtedly extract much suffering from what gives the ordinary mortal no twinge. Other editors have suffered with him, perhaps not so keenly, because they did not know enough to be pained at so many points, yet sufficiently to pray that the sales of his book may be large, and that the readers may be lured from cover to cover by his little jokes and sprightly terms. There has been need of a medical rhetoric, speller, and complete essay writer; and it is a praiseworthy act to tell contributors so plainly and simply "not to put pen to paper, unless they have something to say," and to "stop when done."

Dr. Gould has the tools of the literary man in his knowledge of the way words and sentences are made, and in his feeling for the right word to express the idea. These tires literary men usually forge for themselves in the workshop of classic literature; but medical men are usually too busy to evolve or borrow a dictum; so they either blurt forth their facts in bold English, or map their ideas in queerly compounded hybrid words borrowed from several languages. We fear that much of Dr. Gould's logical and forceful remarks on medical writing will not be appreciated by contributors who feel that the mechanism of putting an article into decent type devolves upon the editor himself and not upon the creator of the ideas. But if every right-minded physician who started out to write an article would consult this neat, concise little hand-book, he would find out a well-recognized way to abbreviate his citations to describe his cases, to put in charts and illustrations, to write his titles, and insert his foot-notes. He would also get valuable hints on paragraphing, punctuation, and medical spelling, and would incidentally derive much enjoyment from Dr. Gould's strenuous efforts to reform those who will persist in adding *al* to those words ending in *ic*, as *chronic, theoretic*, to make them adjective in form. He says: "In some countries the sheep's tails are so long that they hitch a tiny wagon to each animal, so that it hauls its own caudal extremity. Now, the difference between the sheep and our medical Bo-Peep alpacas is that the words give no valuable wool, and we trail them on the ground behind us, as the ladies do their dress-trains."

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ORIGINAL ARTICLES.

TREATMENT OF INFLUENZA IN CHILDREN.*

BY A. JACOBI, M.D., LL.D.,

OF NEW YORK.

Prophylaxis.—Is there anything like a preventive of influenza? There is, contrary to Berger (Die Infections-Krankheiten, 1896), and others, no infectious disease of equal communicability, either direct or indirect. Under extraordinary circumstances only is there a possibility of avoiding contact. Influenza may be prevented from entering a ship coming from distant ports, or a ship carrying it may be quarantined with rather more theoretical than practical effect. Influenza may be kept out of a monastery or a prison or out of an insane asylum or barracks if there is no intercourse with the rest of the world. It should be kept out of a sanitarium for lung diseases by strict isolation during an epidemic. Indeed, I know of no infectious disease that creates a greater disposition to tuberculosis than influenza. To close a school is unavailing, for the children will contract the disease outside. Expectorated mucus and the result of sneezing should, if possible, be caught and disinfected or destroyed; tools, toys, towels, handkerchiefs, and linen should be treated, *i. e.*, washed and disinfected as in other contagious maladies. To protect the children of a household the patient should be isolated on the upper floor of the house, a demand with which it is impossible to comply in the larger part of our population. Nurslings, if their mothers be sick, should meet them for nursing only. Sick and well children should use disinfectant mouth-washes. I think water slightly acidulated with hydrochloric acid will do best. Drinking-water should also be acidulated in the same manner and may have the same favorable result that is obtained in Asiatic cholera. The irrigation of the nose should be a matter of course in the well and in the sick, for the same reasons that have been urged by myself and very persistently and forcibly by Dr. A. Caillé against and during diphtheria. In this way mucus, which according to Ruhemann catches bacilli as in a net, is removed and the mucous membrane is kept in a healthy condition. In which way the bacillus enters is not entirely clear; if it invades through the mucous membrane like the pathogenous bacilli of tuberculosis or diphtheria or cholera, the more normal the condition of the mucous membrane, the greater is the protection.

Medicinal preventives have been recommended —cod-liver oil by Ollivier; calcium sulphide by Greene; quinine by many. Trials with it made on regiments of soldiers under control in their barracks were equally positive or negative. My experience with preventives is very small. Quinine appeared to cause headache and nausea.

Treatment.—There is no specific for influenza like quinine for malaria or salicylic acid for rheumatism. Innocent muriate of ammonium, also carbonate of potassium, sulphocarbolate of sodium, carbolic acid, ichthyol, and other remedies have been so recommended without the expected success. Thus, rational, hygienic and symptomatic and sustaining medicinal treatment only can be considered. A purgative dose of calomel should be given in order to clear the bowels of microbic and toxic ingesta, the bowels appearing to be the principal point of attack in young children. The patient should be kept in bed, the temperature of the room at 70° F. or more at first, the diet should be scanty and fluid at first—milk, cereals, farinacea, water, lemonades, and broths. The further development of the case will gradually indicate eggs, and perhaps—in a few selected instances only—alcohol in addition to other medicinal stimulants. It is more, however, a slow convalescence that requires it than the course of the disease itself. In this respect it appears to differ somewhat from other infectious diseases, particularly typhoid fever and diphtheria. In the latter the doses of alcohol should be high from the beginning.

If there be a high temperature, cold water is not indicated either as a bath or as a pack. The irritating cough which often requires opiates is rather increased than soothed by it; the characteristic bronchitis of influenza does not bear it; the frequent copious perspiration contraindicates it and so does a weak heart under all circumstances. On the contrary, when there is much muscular pain and restlessness, a warm bath is often beneficial. Hot baths should be avoided unless a very short one in an occasional collapse, and Turkish baths require stronger heart-muscles than we are apt to meet in pronounced cases of influenza. While many common cases of pneumonia, with fair circulation, are apt to do well with cold packs, influenza pneumonias do better with warm ones.

According to Ditmar Finkler of Bonn quinine occupies a front rank.[1] Out of eighty of his patients treated with quinine only three made their appearance at the dispensary a second time, while of those treated with other drugs nearly one-half reappeared twice or more frequently. The favorable action of this drug has been observed by Dujardin-Beaumetz, Teissier, Carrière, Pribram

*Part of a paper read before the Medical Society of the County of New York, November 26, 1900.

and others. Mossé, to abort the disease, administered 1.0-1.25 grams the first day, sometimes also the second. Filatow has also observed its favorable effect especially in children. Others, however, as Eichhorst, Tranjen and Bowie, had no success in the use of this remedy, and Leichtenstern believed that the cases treated with large doses of quinine did worse than those that were not so treated. In the German collective investigation reports some praised quinine as giving brilliant results while others were greatly disappointed in its effects.

Whenever vomiting is severe, stomach feeding is out of the question. The temporary abstinence and afterward rectal alimentation find their indication. Alcohol greatly diluted, peptones, mild salt solutions, and liquid albumins are readily absorbed in the colon which even in the smallest infant, though the fetal length of the sigmoid flexure may be persistent, is made accessible by elevating the hip and moderating the current by not raising the irrigator more than a foot above the anus. Peptonized milk, egg and broths are absorbed in part. Starch in the injection is dextrinized in the colon and thus adds to the nourishment of the enema, but though water alone were injected it would add to the circulating fluid. That is why even a large enema given for the purpose of clearing the bowels may add to nutrition and strength by such of the injected water as is almost invariably retained. Thus, severe vomiting should be treated with refusing to feed through the stomach. The best relief is given by morphine, rarely by ice, either internally or externally. It is not necessary to send morphine down to the stomach; absorption is easy and more readily accomplished in the mouth or throat. A tablet of one milligram may be thrown into the mouth of a child of two or four years, there to be absorbed, or half a drop or one drop of Magendie's solution may be administered in the same manner without dilution.

The indications for the treatment of influenza may be several, the high temperature in many cases, the great discomfort, the restlessness, and the rapidly increasing exhaustion. In the treatment of many fevers it is their causes that require consideration;[2] in others, however, their relations to, and influence on, the body are the main considerations. When the condition of the latter is fair, and no danger is incurred on account of the fever, it should be left alone; when the rise of temperature, however, by itself is injurious, it should be interfered with. At all events the treatment of the symptom "fever" gives us no hope of shortening the disease in which it occurs or of which it forms a part; on the other hand, it is a satisfaction to know that, while we increase the comfort and diminish the immediate dangers, the natural healing process is not disturbed. In this way both the justification and the limitation of the so-called expectant treatment become evident. To allow a high temperature to deteriorate tissues and exhaust the heart or brain, is as injudicious as is the custom of emphasizing the number of degrees of Fahrenheit as the only valuable part of a morbid process. To be satisfied with depressing temperature is a grave mistake, but to allow pneumonia to run its deleterious course of high temperatures unchecked with their full influence on the rapidity of respiration and the action of the heart and on the increase of waste, is equally injudicious.

In their injurious influence on nutrition protracted infectious fevers act, first, like direct losses or like starvation, and, secondly, as immediate poisons. The younger the patient, the greater is the danger from that source. That is why a high temperature without any or with a trifling remission should not be allowed to last, though its immediate effect may not appear very ominous. When a high temperature results in a convulsion we never hesitate to reduce it; here we admit there is a vital indication. Why, then, not reduce it while there is the danger of a possibility or probability of its occurrence? Add to these facts the disposition of the young to inanition which is caused by two main factors. The first is their rapid metabolism, the second and principal one is the relative, almost universal, insufficiency of the young organism.

Moreover, we should not forget that most of our antipyretics are at the same time nervines, analgesics and diaphoretics, thus improving comfort and metabolism. They are surely indicated when bathing is not sufficiently efficient or when baths are contraindicated; in that case they may act as adjuvants, as combinations, and procure sleep and remissions. If I add that there are, however, contraindications to the use of medicinal antipyretics because of possible idiosyncrasies and of the debilitating effects which many of the antipyretic drugs are apt to exhibit, I merely say what all have experienced, and what everybody should remember, *viz.*, that no degree of Fahrenheit and no Greek name of a morbid process are the subjects of our medication, but an individual patient. From these points of view our fever remedies should be judged.

In my paper of 1890[3] I said that acetanilid ought to be preferred among the poor because of its low price, antipyrin mainly where great solubility was required for the purpose of its administration in rectal and subcutaneous injections, and that phenacetin was preferable to either when it could be given by the mouth, because of its less uncomfortable effect on the brain, the heart, and the skin.

This opinion I have to modify to a certain extent, not that I object to what I said of phenacetin, but acetanilid should never have an opportunity to show what good qualities it may have, in the rich or poor. It should not be used at all, under any circumstances, not even in the quack preparations which now and then I know to disfigure the prescriptions of regular practitioners. Being a derivative of anilin, acetanilid is poisonous. Not only has it a sedative or rather paralyzing effect on the central nervous system, but it destroys the blood and causes anemia by changing hematin into methemoglobin, though given

sometimes in small doses. That is what gives rise to cyanosis so often observed, more often than after the administration of any other of our modern analgesics and antifebriles. The poisonous effect is even noticed when the drug is used externally, mainly on the young. Examples of such cases were reported at the meeting of the Philadelphia Pediatric Society, April 11, 1899.

Antipyrin when employed during normal conditions increases the tension of the pulse and blood pressure—therefore it is contraindicated in hemoptysis—and produces perspiration. It works more on the general central nervous system than on the center of circulation, that is why it acts—while being antipyretic—as a sedative and analgesic. But it should not be considered as a nervine, for its action appears to be *ushered in* through the mediation of the blood and blood-vessels. The body temperature begins to decrease within fifteen or twenty minutes after the first dose; to render its antipyretic effect more tangible and persistent, it should be followed by a second within two hours. This rule, however, does not hold good when the drug is given for its sedative or analgesic or for its slight antirheumatic effect. Its general effect is mostly good, but its undesirable effects are many. Otto Seifert[4] quotes eighty authors of note who report disagreeable effects of antipyrin; they were observed in the gastro-intestinal, nervous and circulatory system, in the skin and in the mucous membranes. Phenacetin is dismissed with ten. It resembles acetanilid, but is very much milder in its effects. The transformation into methemoglobin takes place after large doses of several grams only. Half-gram doses for antipyretic, gram doses for analgesic purposes are recommended. The doses to be given to infants and children should be from fifteen milligrams to three centigrams (gr. ¼-½).

Salipyrin, the salicylate of antipyrin, is employed by Finkler. While antipyrin causes perspiration, sometimes excessively so, he reports a case in which hyperidrosis was instantly cured by salipyrin. It should be given in twice the doses of antipyrin, is usually better tolerated than the latter, particularly by neurotic or neuralgic patients, because of the relative absence of accidental effects.

Salophen is extolled by Drewes of Hamburg who prefers it to salicylic acid and to salicylate of sodium, mainly in the nervous form of influenza. Adults took from one to six grams, children from three to five decigrams. Finkler, who quotes him, adds: "I believe that most physicians have arrived at the point where they would not like to be without these preparations in influenza, but it should certainly not be forgotten that reports of this kind have quite frequently been used for advertising purposes."

There is something else that should not be forgotten, *viz.*, that there is hardly a disease which has as great a tendency to cause exhaustion and numerous other nervous symptoms, from languor to heart failure, as influenza. If there be the slightest indication of such a danger, none of the above-mentioned drugs should be given without the addition of a stimulant. That should, according to what I said before, rarely be alcoholic. Caffein preparations are vastly preferable; mainly the salicylate (or benzoate) of sodio-caffein, which, being very soluble and readily absorbed, is almost ideal in its effect. That is why in emergency cases of heart failure its subcutaneous administration may often become indispensable. The use of strychnine is so well understood and so general that I limit myself to merely mentioning it.

To what extent stimulants should be given in the average or in the grave cases depends on the general condition of the patient, and on his medical adviser's knowledge of his former health and his resisting power. It is probable that in most cases some daily doses of sulphate of spartein, five centigrams (gr. 5/6) for a child of two years, will have a favorable effect. The caffein preparation I mentioned may be given in doses of from two to six decigrams (grs. iij-x) daily. When it appears to act as an excitant on the brain, it should be replaced by camphor in daily doses of from one to four decigrams. All these doses, however, should be much increased when strong stimulation is required, and in an emergency subcutaneous injections of the same drugs should be used, caffein being soluble in two parts of water and camphor in four parts of sweet almond oil.

One of the best stimulants, useful in the gravest of all cases which are attended with collapse and heart failure, is sadly overlooked among us, *viz.*, Siberian musk. I know of nothing better in the most urgent of cases. A child of two years should take of the 10 per cent. tincture five to ten minims every half hour until half a dozen or a dozen doses have been taken. Musk, together with large, hot enemata, has led me over many a difficult pass, and I again offer this experience of mine, which now extends over fifty years, as a contribution to your aid in dire distress, always, however, reminding you of the fact that all these measures are not exclusive to influenza, but to all conditions of nerve exhaustion, no matter from what cause.

At last, let me allude to a singular experience which was published ten years ago. I do not know that it has been repeated since.* Goldschmidt[5] reports as follows: "About New Year's, 1890, a lady suffering from influenza landed in Madeira and disseminated the disease in a short time. Two months previously there had been an epidemic of smallpox and numerous vaccinations and revaccinations were performed. Now, it so happened that all those who were successfully vaccinated—112 all told—remained free of influenza. Of 98 who were vaccinated unsuccessfully, only 15 took sick." The author concludes from this experience that successful vaccination is a preventive against influenza. But as yet there is

*In the discussion following the reading of this paper Dr. Holbrook Curtis referred to the internal use of vaccine virus by himself and others. A. J.

not enough known to justify any such conclusion with anything like certainty. Still, it suggests the possibility of a future serotherapy for influenza and its very serious consequences.

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THE CLINICAL PICTURE OF EPIDEMIC INFLUENZA.

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The subject of this paper, although well worn, is not devoid of interest. The clinical picture of epidemic influenza is a composite—several panels set into a single frame. The name of the disease is itself a misnomer, a considerable proportion of cases exhibiting no catarrhal symptoms referable to the upper air-passages. This fact is in consonance with the modern conception that many of the specific infections may affect the organism as a whole, without necessarily giving rise to certain special and localized lesions, the presence of which was formerly considered a prerequisite to the existence of the disease. Thus, the finding of intestinal ulceration is not essential to the post-mortem diagnosis of typhoid fever, for in this disease there may be a generalized typhoid septicemia, or the brunt of the attack may be borne by the lungs (pneumotyphoid) or the kidneys (nephrotyphoid). So, also, scarlet fever may kill without an eruption; or in lobar pneumonia the systemic infection may be so intense and overwhelming that death takes place in the stage of engorgement and beginning consolidation, or, in the same disease, the general septicemia dwarf into insignificance the pulmonary localization, although life has been sufficiently prolonged to allow ample time for the development of the latter.

As with these, so with influenza. The incidence of the toxin of the influenza bacillus (Pfeiffer's) may fall sometimes upon one, sometimes upon another, organ or system; or after expending its force upon one set may subsequently involve others; or may manifest itself as a general acute toxemia. The symptomatology of the disease is therefore extraordinarily diverse, and for this reason the disease has superseded malaria as a diagnostic scapegoat with the careless and easily satisfied examiner.

In general after an incubation of from one to four days the disease sets in abruptly with chilliness or, in some instances, with a severe rigor. In women recurring syncope is not uncommon. Fever is almost always present, but is extremely variable, ranging from 100° to 105° F. and continuing with irregular remissions for from one to ten days. Recurring chills with high intermittent fever, closely simulating malarial fever of the same type, are not very uncommon; but a blood-examination shows the absence of the plasmodium.

There is, in almost all cases, severe headache and general aching, with a degree of weakness and prostration which, except in the presence of severe complications, is out of all proportion to the apparent cause. Delirium is not uncommon, especially in women, children and neurotic men.

The general symptoms just described are manifested in varying degrees in all cases. Depending upon the special localization of the infection certain varieties of the disease are recognized.

The early symptoms of the *respiratory form*, which is, perhaps, the most common, are those of a severe coryza, followed usually by pharyngitis, laryngotracheitis and bronchitis. Very commonly a careful examination will reveal a slight, patchy pneumonia with scanty physical signs. The cough is apt to be violent and paroxysmal. The occasional extraordinary persistence of the influenzal cough is one of the remarkable features of the disease, and it may prove one of the most difficult problems of the therapeutist. Morphine to narcotism, in addition to a long list of antispasmodics, sprays, and inhalations, has failed to arrest it, even temporarily, in fortunately rare cases. In other instances the general aching and extreme weakness may be the only characteristics which prove an apparently ordinary coryza to be a true influenza.

The *nervous form* of influenza is almost as common as the respiratory form. The fever is slight, but there is atrocious headache, severe pain in the back and limbs, and marked prostration. These may be, and often are, the only symptoms, but in a certain proportion of cases coryza and cough supervene in the course of two or three days. This is a sufficiently frequent occurrence to require a word of forewarning to the patient.

When the spite of the poison is vented upon the stomach and intestines—the *gastro-intestinal form*—there are nausea, vomiting, abdominal pain, and a profuse watery or serous diarrhea. With these symptoms there is extreme prostration, amounting at times to actual collapse. Such cases are luckily not common, but the possibility of their occurrence during an epidemic of the disease should be borne in mind. I recall an experience of a few winters past in which seven members of one family fell ill, one following the other at intervals of two days, with the regularity of the scholastic row of bricks, three with the nervous form, three with the respiratory form, and one with the gastro-intestinal form of the disease—facts which permitted an easy diagnosis in the last case.

Still more rare is the *typhoid* or *febrile variety* of this disease. The fever is of the continued type, with delirium, dry, brown tongue, tympanites and other evidences of the typhoid status. The recurring chills and intermittent type of fever which characterize a certain proportion of cases have already been mentioned.

The portrayal of the disease is incomplete without a reference to its complications, sequelæ, and occasional symptoms.

Bronchopneumonia is the most common of the respiratory complications; the lobar form less so. Pleurisy is not uncommon, but seldom terminates in empyema. Abscess and gangrene of the lung are rare sequelæ. Edema of the lungs may occur, almost invariably as a sequence of pneumonia. Enlargement of the bronchial glands, of which the physical diagnosis is very uncertain, is, perhaps, rather frequent. Indeed the persistent cough of influenza has been attributed with some show of probability to irritative pressure upon the laryngeal nerves by the swollen lymph-nodes.

Certain symptoms or sequelæ belonging to the organs of circulation are very common. The pulse often remains unduly frequent or quickens disproportionately after exertion for long periods subsequent to the attack. Two instances of paroxysmal tachycardia have been noted in personal experience as a consequence of influenza. On the other hand bradycardia may follow. An irregular pulse is not uncommon. Several cases of the so-called influenzal angina pectoris have been of much practical and prognostic interest. Women, usually but not necessarily of the neurotic type, appear to be the principal sufferers. The pain may be very severe, precipitated especially by mental emotion, less often by physical exertion, and the severest attacks may occur at night. The heart action is usually weak and often irregular. All the cases seen, in two of which a diagnosis of true stenocardia had been made by good observers, have recovered in periods varying from six to eighteen months. In all of these the patients were under forty years of age, and there were no physical signs of arterial degeneration. A weak, often dilated heart, without anginal symptoms, is by no means infrequent. Inflammation of the pericardium and endocardium may occur; so also may phlebitis and thrombosis of different vessels.

The nervous system is affected to some extent in all cases. Thus depression of spirits is extremely common, sometimes developing into an actual melancholia; and a persistent insomnia may follow an attack. Active delirium has been noted, and one case of acute mania, which recovered under sanitarium treatment, occurred last winter as a sequel of a grippal bronchopneumonia. Neuralgias are common; migraine less so. Inflammatory diseases of the nervous system may be initiated. Occasionally one sees cases presenting the symptom-group of cerebral meningitis, these symptoms persisting for two or three days and then vanishing. In two instances death occurred after violent meningeal symptoms and the autopsies showed intense cerebral hyperemia, evidently the beginning of an acute encephalitis. In such cases recovery may occur with a resulting hemiplegia or monoplegia; the formation of an abscess of the brain is rare. Much more frequently encountered is some form of neuritis.

Neurasthenia, of a light grade, is, perhaps, the proper term to apply to the prolonged weakness of convalescence from this disease, but it is astonishing to realize the frequency with which a severe and protracted neurasthenia can be traced directly to an attack of influenza, an attack which at the time of its occurrence did not seem to be of especial intensity. In these cases one cannot help acknowledging a special predilection of the influenza toxin for the nervous system, even when allowance is made for the natural inclination to attribute a condition to the most obvious, although not necessarily the most efficient, cause.

The spleen may enlarge acutely as in other acute specific infections. Catarrhal jaundice is a sequel of which several instances have been observed, due usually to a gastroduodenitis arising from the action of the poison upon the mucosa of this part of the intestinal tract, although the jaundice may be purely of the toxemic form.

Acute nephritis is not rare; hematuria and acute congestion without a true nephritis may occur. Conjunctivitis, as a part of a coryza, is frequent, iritis uncommon, and optic neuritis rare. A rather common complication is a suppurative inflammation of the middle ear, followed in an unusual proportion of cases, especially during the winter of 1899-1900, by mastoiditis. In one case the symptoms were so violent and threatening that operation was imperative at the end of forty-eight hours from its inception, and the whole mastoid process was found to be infiltrated with pus. The fever, which at the time of operation was 105.6° F., subsided very gradually, not reaching the normal until two weeks after the surgical interference. Vertigo, sometimes very persistent, and occasionally due to labyrinthine disease, is not infrequently observed. Herpes labialis is very common. Sometimes a diffuse erythema, and possibly purpuric spots, are witnessed.

With reference to the diagnosis it is desirable that in doubtful, or suspected sporadic cases a bacteriological examination of the bronchial or nasal secretions should be made in order to find Pfeiffer's bacillus, which, if present, will declare the disease to be influenza. This examination is not easy and is reliable only when made by an expert. During the existence of an epidemic there is usually no difficulty in making a diagnosis, nor in a sporadic case if the symptoms range themselves under the head of one of the recognized types. The cardinal symptom is the excessive and disproportionate weakness. The disease may require differentiation from the following:

1. *Typhoid Fever.*—Influenza begins suddenly and lacks the regular temperature curve, rose spots, and positive Widal reaction of typhoid fever.

2. *Cerebrospinal Meningitis.* — In certain cases of influenza the sudden onset, headache, backache, delirium, and muscular stiffness may afford a clinical picture exactly like that of cerebrospinal meningitis, and the differential diagnosis must depend upon the bacteriological ex-

amination; in the one case for the Pfeiffer bacillus, in the other for the meningococcus.

3. *Bronchopneumonia.*—If the question arises as to whether a given case of bronchopneumonia is of influenzal origin, a rather peculiar and anomalous combination of physical signs may answer the question in the affirmative, *viz.*, varying degrees of dulness over both chests posteriorly, with weak respiratory murmur, impaired transmission of voice sounds, and a shower of fine and subcrepitant râles at the end of a deep inspiration, heard in scattered areas or patches, especially at the bases. The combination is probably indicative of a mixture of bronchopneumonic spots and collapsed lobules.

As to prognosis, recovery occurs in the large majority of cases. The mortality varies from ½ to 2 per cent., and is generally due to a complicating severe pneumonia, especially when affecting the very young or the aged.

INFLUENZA AND THE NERVOUS SYSTEM.

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THE numerous affections of all tissues during or following attacks of epidemic influenza suggest either invasion by a most ubiquitous poison, or lowering of the general resistance to the detriment of vulnerable parts. The specific cause of the disease was established by Pfeiffer[1] in the discovery of the influenza bacillus in 1892, and the relations of this bacillus to the multitude of conditions due to the infection have since been abundantly investigated. The almost universal presence of the organism in the secretions of the air-passages indicates clearly its point of contact and favorable culture-ground, and efforts to locate it in other regions have been only occasionally successful. Canon[2] claims to have isolated Pfeiffer's bacillus from the blood, Heryng[3] reports its discovery in the blood from the spleen; Cornil and Durante[4] report a case of meningitis, in which the influenza bacillus was the only apparent cause of the pus in the pia mater; their observations have been confirmed by Eugene Fränkel,[5] and Pfuhl[6] has found the organism in the pus from brain abscesses, and in the cerebrospinal fluid of the lateral ventricles. Pfeiffer himself reports its presence in the lungs, and in sections of tissues found it in the veins, and was able to cultivate colonies from the spleen and kidneys. Krusc[7] regards this general distribution with some doubt. He finds Pfeiffer's bacillus most particularly in the secretions of the respiratory tract (nose and bronchi), and frequently, perhaps even regularly, in certain parts of the lungs, but hesitates to accept statements showing its prevalence in inner organs, especially those of the central nervous system. He acknowledges that the influenza bacillus may be present in these organs, but believes that when they appear to be the chief seat of the disease, there is probably some other hidden localization of the bacillus, as in the accessory nasal cavities, or middle ear, from which its toxin may take its origin. He concludes that influenza is an infection localized in the air-passages, and that the extraordinary general symptoms are due to the formation by the organism of a very powerful poison. Griffiths and Ladell[8] have extracted from the urine of influenza patients a poisonous ptomain, which caused in animals high fever and death in eight hours, and Hood[9] reports similar results of observations carried out by himself.

These reports are of value as confirming the clinical evidences of the virulence of the influenza toxin. With the exception of the few cases in which the bacillus has been thought to exist in other organs than the respiratory tract, the symptoms have been ascribable to the bacterial products, and these have exerted their malignant influence most directly and severely upon the nervous system. The invariability of the nervous manifestations, even with predominating symptoms in other than nervous organs, has been universally noted. Thus Heidenreich,[10] writing during the pandemic of 1830-'33, declared epidemic influenza to be "an affection of the ganglia, with irritation of the mucous membranes;" Leichtenstern,[11] in his observations upon the pandemic of recent years, reiterates, "There is no doubt that the influenza toxins are severe nerve-poisons, and incite inflammatory and degenerative processes, especially in the peripheral nerves, similar to other bacterial toxins and poisons (alcohol, lead, mercury, etc.);" Berkley[12] states that the "toxin of influenza seems to fall with especial stress upon the central nervous system;" A. Schmitz[13] defined influenza as "in the first line an epidemic nervous disease;" Sell[14] as "infectious neurasthenia;" Wilks[15] regards the "nerve disturbances as the very essence of the complaint," and Althaus[16] goes so far as to claim the "bulb as the portion of the nervous system affected." Draper[17] writes that "the cause of the disease is one which spends its force primarily and directly upon the nervous system," and directs attention to the frequent occurrence of relapse, which "is more severe and accompanied by more serious lesions than the original attack."

In the absence of bacteriological proofs, which are not always obtainable, a certain symptom-complex is accepted as pathognomonic, and the diagnosis may be decided by the epidemic character of the disease, and, in the individual case, by "the sudden invasion with chill and high initial fever, the extremely *prostratio virium*, the intensity of the nervous symptoms, and the sometimes exclusively nervous character of the disease, without respiratory symptoms. (Leichtenstern *l. c.*) It may be added that mild attacks occur without the initial febrile invasion, in which the *prostratio virium* is far more severe than that usually associated with infectious processes. In no other toxic disease, except tetanus, is there such disproportionate involvement of the nervous system. This is shown by lassitude, weakness

and mental depression, and is not infrequently followed by one or more complications, as cough, bronchitis, pneumonia, meningitis, anorexia, diarrhea, nephritis, which have given rise to the misleading classification of the disease into the "respiratory," "nervous," "digestive," "circulatory" and "genito-urinary" forms.

Influenza may consequently be defined to be an acute infectious disease, caused by a specific bacillus, cultivated in the respiratory tract, the toxin of which possesses an especial affinity for the nervous system.

Practically every known form of nervous disease has been attributed to influenza. In many cases a previously existing or quiescent malady has been lighted into activity, and instances of severe degenerative lesions of the nervous system, as paralysis agitans, disseminated sclerosis, system diseases of the spinal cord, general paralysis and exophthalmic goiter, may be explained in this way.

The undoubted and unquestioned nervous conditions due to influenza may be divided into two classes: First, those accompanying the invasion of the disease, and appearing as its initial symptom; and, second, those following as sequelæ or complications.

The nervous symptoms accompanying the attack may be manifested in the peripheral nerves, both cranial and spinal, or the central nervous system. An almost invariable symptom of the invasion is severe neuralgic headache, generally most pronounced over the frontal region, and involving the eyes, causing the tearing or aching pain in the bulbs which is particularly characteristic of the disease. Second in frequency only to the cephalic pain are the neuralgias in the limbs and back and intercostal spaces. Gowers[18] regards the pains in the back and limbs as originating in the fibrous tissues, and compares them with "fibrous rheumatism." The lumbago and sacral inflammation may extend to the sciatic nerve, giving rise to perineuritic sciatica. Neuralgias in the distribution of one or more branches of the trigeminus nerve are common, usually showing points of exquisite tenderness on pressure. Other peripheral pains of most varied character have been noted, varying from transient discomfort to neuritic seizures lasting several weeks, and attacking individual nerves or groups, often of asymmetric and unusual distribution. Thus one patient, while dressing in the morning, having had no prodromata, experienced an excruciating pain in the right shoulder, at the same time became chilly, feverish, dizzy, and was prostrated. The limb was not moved without great suffering and remained helpless for several weeks. During convalescence it was one inch longer that its fellow (the scapular muscles). Joffroy[19] reports a case in which neuralgia in the arm and shoulder was followed by atrophy of the deltoid, supraspinatus, infraspinatus, pectoralis and biceps; Brosset[20] cites a case presenting paralysis of all four extremities, and Leyden[21] reports a case of Landry's paralysis, beginning with the "typical picture of polyneuritis, and becoming dangerous by ascending." In his case the peronæi, right radial and root of the recurrens showed neuritic atrophy, and there were microscopic lesions in the cord.

The post-influenzal symptoms on the part of the peripheral nerves are even more bizarre than those accompanying the febrile attack. These may be the effect of an originally severe lesion, in which more than a functional disturbance must be assumed, as a greater or less degree of neuritis. Leichtenstern (*l. c.*) summarizes the literature to 1896, which includes cases of palatal and pharyngeal palsy, paralyses of the extrinsic and intrinsic ocular muscles, singly and in various combinations, unilateral or symmetrical; hypoglossal and facial paralysis, lingual hemiatrophy, atrophic paralysis of the shoulder, chest and limbs, including affections of the deltoid, supraspinatus, infraspinatus, trapezius, serratus magnus, pectorals, and the musculature of the distribution of the radial, ulnar, median, peronæal and crural nerves. Von Rad[22] also reports a case of pure serratus paralysis following influenza. Oppenheimer[23] reports three case of bradycardia, in which the pulse-rate became forty, forty-eight and forty-five, respectively. He writes that he has "not the least doubt that the *pulsus rarus* is due to the immediate action on the pneumogastric nerve or the ganglia of the heart by the influenza toxins." The writer has also observed a patient showing an abnormally low pulse-rate, varying from sixty to forty-four, and also a case with pronounced cardiac arhythmia. Sansom[24] describes cases of tachycardia, with or without irregular action of the heart, and has observed palpitation, flutterings, flushings, perspirations, faintness and tremors, together with paroxysmal dyspepsia and flatulence, nausea, gastralgia and diarrhea—attacks to which he has applied the suggestive name of "vagus storms."

Such a "storm" was exhibited in the following case, showing a most remarkable grouping, in which temporary Cheyne-Stokes breathing was complicated by involvement in succession of the sensory and mixed cranial nerves of the right side—the first, second, fifth, eighth, ninth and tenth—the motor series remaining intact.

The patient was a gentlewoman, aged about forty years, widowed, a school teacher, who for several years had been under both medical and surgical treatment for irregular lesions, neuralgic and osseus, attributed to specific disease. During the second week in March, 1899, she was prostrated by the characteristic febrile movement and pain of influenza, which was then prevalent. On March 21st she was much improved, free from pain, and appeared to have entered upon convalescence. During the following morning she became greatly exhausted, had dyspnea and complained of pain and numbness over the entire right half of the cranium, stating that the affected area was clearly defined by a line drawn through the middle of the face and head. This condition became more pronounced during the day, in the

evening there was difficulty in swallowing, and she stated that the right side of the head "felt as if it belonged to another person." Examination revealed in the affected region analgesia and partial anesthesia, tenderness at all of the trigeminal points, puffiness of the eyelids and face, distention of the veins and deviation of the lower jaw to the left upon opening of the mouth, with paresis of the right masseter. The temperature was 100° F. On the 23d of March further examination showed the hearing of the right side to be lost, both externally and by bone conduction, and entirely normal on the left. On the 24th of March there was absence of the sense of smell and tactile sense of the right nostril, the test being made with paregoric and camphor; inspiration was deeper and fuller on the right half of the thorax than on the left; the right eyelids were edematous and the supraorbital region was tender. The eyeballs moved freely in all directions. There was some difficulty in reading, but the fingers were counted correctly, and no affection of sight could be determined. At eight o'clock in the evening the patient became extremely restless and complained that she could not lie upon the right side, which had hitherto been the easiest position. The respirations numbered thirty-six, and the expansion of the left side was greater than that of the right. She spoke of a "queer, drawing" sensation of the right side of the neck and a "peculiar sound" about the ear. Hearing on this side was still absent. She also complained of a "tugging" sensation from the epigastrium to the back, and while the examination was in progress, a plainly defined rectus spasm was observed, followed, a few minutes later, by irregular, sharp, clonic contractions of the muscles of the trunk and neck of the right side, and finally of the right upper extremity. The temperature was normal, pulse 100. At this time the respirations became irregular, and closely approximated the Cheyne-Stokes rhythm. Photophobia was marked, there was temporary stupor, and a convulsion seemed imminent, but the crisis was promptly relieved by a subcutaneous injection of morphine. On the following morning the patient was greatly improved, able to take nourishment, stronger and free from pain, and two days later convalescence had begun. Slight numbness and defective hearing continued for several days, but complete recovery followed.

Bristowe[25] and Preston[26] report numerous cases of labial herpes in epidemics at a school for girls and on board a training-ship, respectively; G. Finzi and Camillo Moglia[27] observed herpes zoster, and Luigi Pennetti[28] reports a case of bilateral zoster.

The effects of influenza upon the central nervous system may be immediate or sequential. The immediate effect, manifested as great nervous prostration, has already been mentioned. Gross acute lesions of the brain and cord have been noted. Geill[29] states that "at autopsies of cases dying from the influenza poison the central nervous system is always found much congested." Oppenheim[30] mentions the deceptive attacks of hemiplegia, monoplegia, aphasia, etc., following infectious diseases, and especially influenza, which, after a longer or shorter time, disappear. Meningitis, simple, purulent and hemorrhagic, has been several times recorded, and a severe form of the invasion of the fever, resembling meningitis, and terminating promptly in recovery has been recorded by the French as "pseudo-meningitis grippalis."

The following case may be cited as showing the confusing character of the nervous symptoms of influenza and the great possibilities for error.

The patient, a schoolgirl, fourteen years of age, was received at the St. Lawrence State Hospital on December 28, 1893. The delirium had been prolonged and severe and resulted in the diagnosis of insanity and the subsequent commitment. In the institution the meningeal origin of the symptoms was at once recognized, but the lesion was supposed to be tuberculous, a supposition which appeared justified by the pulmonary signs. The eventual restoration of the patient to complete health necessitated a revision of the diagnosis, which was then decided to be "grip pneumonia and meningitis." When admitted to the Hospital the patient was said to have been insane for two months. She was in a cataleptic state, with irregularly occurring local and general spasms, and complete mental and physical helplessness. At the preliminary examination paraplegia, ophthalmoplegia, retraction of the head and of the abdomen, rigidity, general cutaneous hyperesthesia and *tache cérébrale*, with distinct dermographia, were the predominating symptoms. She remained in a critical condition and during the month following there was a marked febrile movement, but with occasional periods of improvement in which she exercised some control of the voluntary muscles. On January 10, 1894, examination of the chest showed areas of dulness at both apices, posteriorly, with general diminution in resonance, universal bronchovesicular breathing, coarse, dry rhonchi, and occasional sibilants, indiscriminately distributed through the lungs. A few days later acute decubitus developed over the trochanters of both sides, and clearly punched, sloughing ulcers, extending to the bone, resulted. On February 19th the high-pitched percussion note, with dulness, was elicited as before, and the sibilant râles continued, as did the bronchial quality of the respiration. There was some improvement in the general condition at this time, and the ulcers of the thigh began to heal. In March the meningeal and pulmonary symptoms had disappeared, and the patient began to rally from the extreme helplessness. Her mind was clear and she began to use her limbs. In April she was able to move about, gained in weight, convalesced rapidly, and early in June she was discharged from the Hospital, entirely recovered.

Of the acute hemorrhagic meningitis in the etiology of which influenza is especially prominent, Strumpell[31] writes: "These cases are ush-

ered in by most sudden and severe cerebral symptoms, and with high fever pass quickly to a fatal termination. The autopsy reveals, generally in one hemisphere only, numerous hemorrhagic encephalitic foci."

Among the functional disturbances of the nervous system due to influenza, hysteria and neurasthenia have frequently occurred. A liberal interpretation of the neurasthenic symptom-complex permits this condition to represent the postinfluenzal vital depression. Gowers[32] graphically describes this as follows: "It is an intense feeling of inertia. Every action, physical and mental, requires an effort of the will to initiate and maintain it that is almost painful. . . . In perhaps the majority it is only after some months that the natural freedom of untrammeled effort is regained." Neurasthenic states, rapid fatigue on exertion, lassitude, loss of the faculty of mental concentration, follow naturally the initial nervous depression. In many cases, under prompt treatment, these conditions improve in a comparatively short time, but others continue for months ordinarily associated with melancholy or hypochondriasis.

The psychoses of influenza also play an important part in its record of debility. Leichtenstern (*l. c.*) assumes that short and sharp attacks of mental derangement may be regarded as a prolonged and atypical manifestation of the initial delirium, generally occurring in patients of good heredity, while the prolonged attacks of insanity probably indicate a predisposition.

Analysis of the causes of insanity alleged upon admissions to institutions for the insane shows that the number of cases attributed to influenza reached its maximum several years after the pandemic of 1889-90. Thus, no patients whose insanity originated in influenza were admitted to the Pennsylvania Hospital for the Insane until the year ending March, 1892, when nine were received. To the New York State Hospitals for the Insane, six postgrippal commitments were made in 1890, in a total of 1942 admissions, and in 1892, sixty-four were received in a total of 2637 admissions, or two and a half per cent., the number remaining fairly constant for the succeeding years. Unfortunately for comparison, statistics are not given as to the grafting of insanity upon other infectious diseases, but its occurrence following typhoid fever and pneumonia is known to be infrequent.

It is shown by these figures that some other factors than the poison of the disease must be operative, and these are to be found in the mental and physical prostration following the disease, which offer a suitable basis for the development of insanity in susceptible subjects. Chapin[33] believes that "it is not established or probable that insanity can arise directly from zymotic influences, but it does happen that whatever causes operate to depress vital force or lower the standard of bodily health, diminish the power of resistance, and the weaker organs are the first to show failure." He also directs attention to the disastrous moral effect upon the community of "a sudden and wide-spread epidemic, which leaves an impress directly and remotely upon the general health." Régis[34] emphasizes the hereditary predisposition. Clouston[35] writes that "the poison of influenza destroyed the cortical energy to a much larger extent than any of the continued fevers or zymotics, and its effects on the mental condition of Europe during the years of its prevalence far exceeded in destructive powers all those diseases put together. It left the mental and nervous tone of Europe lower by some degrees than it found it." Wernicke[36] places influenza as the type of acute diseases in which the nutrition and general strength are rapidly reduced. Jutrosinski[37] notes the immoderate use of depressing drugs, as antipyrin and antifebrin, as a contributory cause of the influenzal insanity.

All forms of insanity have been attributed to influenza, but statements as to the organic-degenerative types, especially those of insidious beginning, as general paralysis and the senile insanities, must be accepted with caution, as an already existing or threatening condition may have been accentuated. The deleterious and often fatal effect of the disease in old age has been noted, both within and without hospitals for the insane. The general experience has been summed up by Draper (*l. c.*), who writes: "Its most serious results have been observed in persons of advanced years and in those enfeebled by previous disease or intemperate habits."

The prevailing form of postinfluenzal insanity has been melancholia, not infrequently with a pronounced hypochondriacal element. This has been accentuated by active disturbances of the senses, with delusions, giving rise to a state of hallucinatory confusion, and in more severe cases by acute delirium. Maniacal states have been common, but much less frequent than melancholy. With the exception of a peculiar group of cases simulating general paralysis, cited by Hack Tuke,[38] there has been little pathognomonic to differentiate the postgrippal psychoses from similar states due to other causes. The prognosis in postinfluenzal mental maladies is generally hopeful. As a complication in existing insanity influenza has had many results. In general its effects may be regarded as commensurate with the resisting power of the patient. As an agent promoting recovery from insanity, a not uncommon result of intercurrent febrile affections in institutions for the insane, influenza has not been effective. Metz[39] alone reports an instance in which insanity was favorably influenced. His patient, who had been the victim of persecutory ideas for two years, was prostrated by influenza on January 13th; on the 17th, wrote a coherent letter, and on February 9th, following, was discharged from the institution, recovered.

From what has been written the following conclusions may be derived:

1. The infection of influenza produces a toxin, which has a severe and selective action upon the nervous system.

2. The immediate effects of this toxin are shown in affections of the peripheral nerves and the cerebrospinal centers.

3. The remote effects are manifested in lowered tone of the nervous system, predisposing to other diseases.

4. These ensuing diseases arise in weakened or predisposed organs, giving rise to the different classes of "respiratory," "alimentary," "genito-urinary," and "circulatory" forms of influenza.

5. Postinfluenzal insanities are also a complication of the postinfluenzal states of nervous debility, in patients mentally predisposed.

6. The postinfluenzal insanities are not essentially different from other insanities due to vital depression.

7. The prognosis of influenzal affections is generally good, under proper management.

8. Exception to this is in influenzal affections arising during the course of other severe diseases, as pneumonia and general paralysis, and during senility complicated by mental or physical deterioration.

Addendum.

Table showing the total number of admissions and the admissions attributed to influenza in the Pennsylvania Hospital for the Insane (private), and in the New York State Hospitals (public), from 1890.

	1890	1891	1892	1893	1894	1895
Total admis'ns.	192	172	175	183	163	164
Pennsylvania Hospital:						
Postinfluenzal admissions ..	0	9	3	3	5	1
	1896	1897	1898	1899		
Total admis'ns.	152	169	169	181		
Postinfluenzal admissions ..	3	0	2	2		
	1890	1891	1892	1893	1894	1895
Total admis'ns.	1942	1401	2637	2704	4001	3029
New York Hospitals:						
Postinfluenzal admissions ..	6	11	64	51	51	72
	1896	1897	1898	1899		
Total admis'ns.	5615	4649	5542	5243		
Postinfluenzal admissions ..	62	49	41	64		

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THE BACTERIOLOGY OF THE INFLUENZA BACILLUS.

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NOTWITHSTANDING the many bacterial investigations carried out (1889-92) for the purpose of determining the microbic factor concerned in the production of influenza, it was not until 1892, after the great epidemic, that studies revealed any micro-organism which could seriously be regarded of etiological significance. In the early part of that year Pfeiffer[1] found a very small hitherto undescribed bacillus which at least in some measure conformed to the requirements of specificity. Almost simultaneously appeared the papers of Canon and Kitasato describing the same micro-organism. Later studies have abundantly confirmed the observations of this first investigator. Whilst the evidence at hand does not fully fulfil the postulates of Koch, the fact that it is found almost only in cases of influenza, and that its presence corresponds to the course of the disease, certainly warrants the belief of such a relationship.

When examined either from exudates or cultures the bacillus of influenza appears as an extremely small, slender, non-motile bacillus, whose length scarcely exceeds its breadth by two or three times. The bacilli may be stained by almost any of the basic aniline dyes which they take up rather feebly and irregularly; the poles are usually more deeply colored than the middle parts, thus often giving the appearance of diplococci. In the writer's experience carbol-fuchsin or Löffler's methylene blue has given best results.

The organisms are readily decolorized by Gram's stain, although Kamen states that when influenza bacilli are grown in an atmosphere of hydrogen they often are quite resistant to decolorization by this method.

Although the morphological features of the organism appear quite constant, it is of interest to note the observations of atypical forms by Grassberger.[2] In cultures showing involution forms he was able to study long filamentous types with or without branching and sometimes with bulbous extremities. Lartigau has also seen forms somewhat like this in cultures subjected to somewhat higher temperatures than 37° C.

The facility with which the bacillus influenzæ is destroyed is a matter of much practical importance. Outside the body it has been found very susceptible to injurious influences, such as drying and suspension in unfavorable media. Drying seems to exercise a particularly destructive action; thus Pfeiffer found that bacilli dried for twenty hours were killed; or sputum which had been dried for two days gave no cultures. In ordinary water the life history is also very short. Suspension in such a fluid usually caused their death within two days, whereas in bouillon they may retain their vitality up to two weeks.

From observations of this kind it has been generally assumed that the extracorporeal existence of the influenza bacillus must be very short, and that infection probably takes place by means of the freshly contaminated secretions. As to this being the only method, we are less certain. In this connection the observations of Kaufman[3] are of the greatest interest. As a result of numerous examinations of the dust of telephone-receivers he was able to find bacilli of influenza many times. This is the only observation of this kind that we know of in which these germs have been found outside of the body or its fresh secretions.

Heat and chemical influences react very readily upon this bacillus. Exposure to a temperature of 60° C. certainly destroys it in five minutes; higher temperatures act much more rapidly. Immersion for ten minutes in 1-1000 bichloride of mercury solution, or for thirty minutes in 1-100 carbolic acid, kills it.

The cultural side of the subject for a certain time presented difficulties. Pure cultures may, however, be obtained on the surface of solid media previously smeared with a small amount of blood, either of human or animal derivation. Agar-agar (with or without the addition of glucose or glycerin) and blood-serum give the best results. Experience has shown that the value of adding blood resides in the blood coloring-matter, for the addition of hemoglobin alone acts equally well. Nasstinkoff, on the other hand, substitutes the yolk of egg for the blood and claims satisfactory results. Kruse recommends the use of agar plates covered with rabbit's or pigeon's blood, upon which the infected material is spread with a platinum brush.

The best cultivations occur at body temperature; although it is stated that no growth can be obtained below 28° C., the author has found this possible by gradually cultivating the influenza bacillus at diminishing temperatures. According to Pfeiffer, growth does not take place in the absence of oxygen, and only very slightly in the depths of stabs. Kamen, however, has grown the organism in hydrogen. When thus cultivated he found that they live for three weeks, whereas they usually die within ten or fourteen days when grown exposed to the air. Whilst able to obtain some growth under anaerobic conditions the author has not noted the differences in viability studied by Kamen.

Meunier,[4] as did Grassberger before him, pointed out that the presence of the staphylococcus pyogenes aureus exercises a most favorable influence on the development of the bacillus influenzæ in cultures, not only as regards abundancy, but also seems to stimulate growth activity. Several trials under these conditions have convinced the author of the accuracy of the observations. This, of course, has been noted for other bacteria also.

At the body temperature colonies develop at the end of twenty-four or forty-eight hours and appear as extremely small hyaline droplets, clear as water, often only detectable with a lens. The older colonies sometimes have a yellowish or brownish center, supposedly due to absorption of the coloring-matter of the medium. Kitasato makes it a special point to insist that the colonies are never confluent; as a rule, this is certainly so, but occasionally one notes confluence of two or more colonies. In broth the growth is less abundant; at the end of forty-eight hours white particles are seen on the surface which after a time sink forming the so-called "woolly" precipitate.

Up to the present times studies of the experimental infections with the influenza bacillus have really not been very numerous. It has been clearly shown that under natural conditions influenza probably does not occur in the lower animals. But our knowledge of the experimental side is sufficient to show that a series of phenomena may be induced in animals by the introduction of living and dead bacilli in some respects like those observed in human beings; the analogy is, however, by no means so close as certain experimenters would have us believe. Pfeiffer by injecting living cultures into the lungs of monkeys was able to induce a condition of fever of remittent type. Somewhat similar results were obtained by smearing the uninjured mucous membrane of the nose with a pure culture. In another case in which large quantities of the germs were thrown into the upper respiratory passages, marked prostration and high fever occurred; finally, the animal died at the end of twenty-four hours. There was little evidence of multiplication of the bacilli; the effects were evidently largely due to toxins contained in the bodies of the bacteria. In the case of rabbits, intravenous inoculations of living cultures produce dyspnea, muscular weakness, and fever, but the bacilli very rapidly disappear from the body. Similar effects have been incited by the injection of dead bacilli.

The results of these experiments led Pfeiffer to conclude that influenza was largely a toxic process arising from the absorption of poisonous substances within the bacterial protoplasm. This view has been further extended by the studies of Cantani, and Delius and Krolle.

Attempts to produce immunity in animals have been followed by almost uniformly negative results. Studying the action of the influenza toxin by intracranial injections Cantani added nothing to our knowledge in so far as immunization is concerned. The more recent investigations of Delius and Krolle[5] were somewhat more encouraging, but on the whole negative. Increasing doses of culture within the peritoneum enabled greater resistance, but large doses were invariably fatal. And this is more or less in harmony with clinical observation which shows that instead of immunity after an attack, the individual is really as susceptible as before if not more so.

The distribution of the influenza bacillus within the body is of great interest. In ordinary cases it has been found in the bronchial exudate and nasal secretions in considerable numbers. In typical acute cases it is often present in almost pure culture in the purulent greenish-yellow bronchial exudate. Kamen succeeded in finding it in every one of the hundred cases he examined. At first the bacilli are free, often in clumps, but as the disease advances one sees them more often within the protoplasm of leucocytes. Toward the end the large proportion of them have this distribution. It is stated that as the number of bacilli decreases the staining becomes less sharp and involution forms are apt to appear.

In the epidemic of 1898 Wassermann[6] says that in influenza cases with pneumonia the influenza bacilli were scanty and disappeared very soon; and Clemens[7] has again spoken of the relative rarity of cases in which influenza bacilli may now be demonstrated.

It is a matter of some importance that it be clearly understood that the influenza bacillus may persist in the sputum for weeks after abatement of the symptoms. Elmassian[8] goes so far as to say that it may exist in the respiratory tract as a saprophyte. Other organisms, especially pneumococci and streptococci are often associated with the influenza bacilli, either in acute cases or in chronic lesions of the lungs. Pfeiffer has shown that the influenza bacillus may be found many months in association with chronic diseases of the lungs, at times producing exacerbations. Finkler has observed this tendency among consumptives. Williams[9] in the examination of washed sputa in cases of pulmonary tuberculosis has also found abundant influenza bacilli when no influenza was known to be present in New York. Under appropriate conditions, we have then almost at all times the excitant with which to start an epidemic.

The inflammation of the lung sometimes extends to the pleura; when this has happened the influenza bacillus has occasionally been found in the pleural exudate. But the action of this organism is by no means limited to the respiratory system. Indeed, it has been found in the pericardium (Hogersted), endocardium by Flexner and Austin and in the central nervous system by Pfuhl and Walter, and Cornil and Durante. Pfuhl believes that meningeal infections occur through the roof of the nasal cavity. Haedke has described an interesting case of meningitis and epidural abscess secondary to otitis media in which influenza bacilli were found in the pus from the ear and mininges. The bacillus has also been found in uncomplicated middle-ear disease by Bulling, Pfeiffer, and the writer.

Notwithstanding the statement of Canon that the bacilli may frequently be found in the circulating blood, the opinion of most observers leans the other way. Klein succeeded in finding them in only six out of 43 cases; and Pfuhl obtained it once out of six cases. Slawyk has reported a most interesting case of general infection with multiple localizations in the joints (hands, foot, knee) and meninges.

Turning to the side of diagnosis, one readily from the first appreciates certain difficulties in the application of the bacterial method along practical lines. Within certain limits an early diagnosis may often be made by a mere microscopical examination without resorting to cultures. If a specimen of sputum should contain an almost pure culture of very minute bacilli which take the stain faintly compared with the other bacteria present and which are decolorized by Gram's method, it may be assumed that the case is one of influenza. When other bacteria are present the diagnosis becomes more difficult; cultures will usually then be required. In order to insure success the sputum should be collected with care. The mouth is first washed with sterile water, the sputum placed in sterile dishes, and the culture prepared on media covered with blood. The morning sputum is most satisfactory. Wynekoop, of Chicago, who has given the bacteriological side of the subject much attention, uses a swab to procure some of the infected mucus or exudate from the pharynx, tonsils and bronchi of the patients. The swab is then rubbed on solidified serum containing hemoglobin. The staining procedure is much the same as that employed for microscopic diagnosis of diphtheria. Smears are made on coverglasses by means of the swab. The smear is then stained by carbol-fuchsin (Ziehl's solution). Culture specimens of the organisms are also stained by the same reagent.

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THE TREATMENT OF INFLUENZA IN ADULTS.

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SINCE it is universally admitted that epidemic influenza is an infectious disease the theoretical treatment should consist in remedies which would neutralize or antidote the infection; but inasmuch as the infectious process is primarily of short duration and one attack does not render the patient immune against another, it is not likely that any preventive vaccine will succeed in either protecting the patient against an attack or in mitigating the severity of the disease in a patient already affected. So long as we do not know of any specific agent which will abort an attack, or mitigate the severity of the infection, it is proper that we should consider the subject under different phases and for each type endeavor to formulate a treatment.

Generally speaking, epidemic influenza will manifest itself in one of three forms, *viz.*, (1) that in which the brunt of the attack is upon the respiratory system, (2) that in which it is upon the gastro-intestinal system, or (3) that in which it is upon the neuromuscular system. Respiratory affections are evidently the most frequent and at the same time of more lasting moment, therefore it is of these that we will first consider the treatment.

At the outset in discussing the treatment of the respiratory form of epidemic influenza, certain clinical facts in relation to the history of the disease must always be borne in mind. First, and of diagnostic importance, is the fact that the prostration and the fever and the systemic disturbance are out of all proportion to the extent or severity of the disease as determined by physical signs. Next, granted a moderate involvement of respiratory area or even a disease stationary so far as extent of tissue is involved, this is no guarantee as to the prognosis in an individual case. The logical deduction from this observation is that we are dealing with an infectious process in which prostration is marked, in which supporting treatment is from start to finish urgently needed, and, while it may be very tempting to yield to the delusions of our ancestors and catch hold of that bugbear of the last generation and attack the fever as a morbid entity and subdue it, as we can, by a dozen different methods, it is undeniedly true that, while the results may be a better-appearing temperature chart, we have certainly done our patient injury. The more we know about fever as a symptom, the less we are disturbed either by its height or by its duration. If temperature must, in the opinion of the physician, be lowered, it is more effectually done by the ice-water coil over the heart than by any other method. So, also, pain may appeal to the routine practitioner as something that is to be attacked with vigor and the hypodermatic syringe and the morphine tablet be urgently indicated, perhaps even demanded by the patient; but the interference with nutrition and the damming up of the excreta would certainly leave the patient in a worse condition than would the pain.

However, specifically, what shall we do for a patient suffering from uncomplicated epidemic influenza attacking the respiratory system? First, free and comfortable expectoration should be obtained by methods which do not disturb the heart. First and foremost ammonium carbonate in five-to-ten-grain doses, repeated as frequently as the situation may require, each dose to be given in two ounces of milk, will relieve unnecessary coughing, will remove a great deal of the chest oppression, will fortify the heart, and, so far as I know, has only one disadvantage, *viz.*, the liability to produce a disturbance in the stomach after five or six days. The irritation of throat and nose is best relieved by sprays of ten drops of eucalyptol or five or ten grains of menthol to the ounce of albolene or other suitable liquid hydrocarbon. It is needless to say that the patient should be housed, kept in a room of equable temperature, not too hot, and that his diet should be a fluid one and as nutritious as possible. If the ammonia is not well borne, strychnine, either as good-sized doses of tincture of nux vomica or strychnine itself as a sulphate or nitrate, should be administered. Here we get not only the action of strychnine on the heart muscle and respiratory center, but as well its action on the cord and the resulting improvement in nutrition. As for the use of alcohol, the previous habits of the patient and the urgency of the symptoms call for consideration. Generally the patient is better without it. The methods for relief of pain will be considered later.

When from physical signs we find that we are dealing with pneumonia, then the teaching which we have already followed so carefully during the past few years must guide us. The bleeding of the lesser into the greater circulation by the nitrites, preferably nitroglycerin, and increasing and frequently-repeated doses of strychnine, must be carried out until the patient is convalescent. But inasmuch as the danger is not so much from the mechanical side as from the infection, every opening for elimination must be seized upon and every indication for supporting treatment followed. The skin, the kidneys and the bowels must not be neglected. For a slowly-resolving pneumonia and for a tardy convalescence from bronchitis, no drug yields better results than creosote carbonate, thirty or forty drops given in sherry several times a day.

It will be readily noticed that this scheme does not include any of the depressant expectorants, any of the depressant coal-tar products, or any of the physical means, such as poultices and cold- and hot-water applications or baths and various other indirect methods of obtaining what we perhaps get more readily by what has been outlined. The keynote to the situation is supporting the patient and eliminating the morbid products.

In the gastro-intestinal form of epidemic in-

fluenza the pain, nausea and vomiting all call for relief. At the outset I presume nothing is better than a thorough evacuation of the bowels by calomel given in small doses frequently repeated. Next comes intestinal antisepsis which can be accomplished by the organic bismuth salts, naphtalate, iodophthalinate, or, possibly, the subgallate. High intestinal irrigations aid much in the elimination of the toxins, not only by the bowels but also by the kidneys. Frequently rectal alimentation is urgently demanded and must be carried out. Sometimes small amounts of zoolak, small amounts of a good beef-extract (by that I mean those containing the albumins) will be retained when taken by mouth.

In the neuro-muscular type of influenza, the bone-breaking pains call for treatment, and for all that quinine, here as in other forms, has been lauded, personally I have found that the results obtained hardly warrant our pushing it to the extent which the severe infection would seem to justify. Euquinine seems somewhat more efficient, although statements made that it does not cause tinnitus are incorrect, for if administered in sufficient amount the tinnitus is quite as severe as that caused by quinine sulphate, for instance. Although there is great temptation to relieve the headaches and the muscular pains by the coal-tar products of the anilin series, those which are sufficiently analgesic are also to a greater or less extent cardiac depressants and their unrestricted use is by no means advisible. In fact, it may even be dangerous. For instance, Hale White reports that seventeen deaths from the use of antipyrin occurred during one epidemic of influenza in the city of Vienna alone. However, it is possible to relieve a large part of the suffering in this form of influenza by a combination of coal-tar products and salicylic acid or some of its forms without incurring dangerous depression in the circulatory and respiratory apparatus. This may be accomplished, for instance, by alternating phenacetin or acetanilid, of which the depressing action upon the heart is neutralized by caffeine, with acetanilid and methyl salicylate, or salipyrin, a combination of salicylic acid and antipyrin, may be administered to the extent of relief of pain; but, in spite of the laudation with which this drug has been favored, I have seen depression produced by its use, and here caffeine should always be employed to counteract its influence. If the practitioner will guard his analgesic of the anilin series with caffeine and limit the dose to that required for the relief of pain and to a less amount than that which disturbs the heart, we may feel much more confidence in advising its use. Kryofin seems more decidedly analgesic and less depressant than most of this series.

There is a rather neglected remedy which very frequently, though not invariably, affords great relief from the headaches and backaches so common in influenza. I refer to gelsemium, which should be pushed until slight ptosis appears, when the limit of its physiological activity has been reached. The success, when obtained, is so brilliant that it is really worth the trial, although, so far as I know, no exact indications can be furnished for its use, nor can *a priori* success or failure be predicted. Sometimes the muscular pains, if limited to the back, can be markedly relieved by external applications. For this purpose the best is a mixture of equal parts of kaolin and glycerin to which ten per cent. of boric acid has been added and a sufficient quantity of any volatile oil to make an agreeable odor, applied as a cataplasm in sufficient thickness and kept hot. This is cleanly, retains its heat and is renewed without difficulty.

I have already said that elimination of the toxins should be safeguarded. Fortunately constipation is not a common symptom in influenza. For the diarrhea which occurs in most victims no treatment is indicated. From the beginning a neutralization of the infectious material in the intestines should be brought about as already shown. The diarrhea should be looked upon as beneficial. Warm baths relieve muscular pains and, when accompanied by friction, keep the skin in good condition and add much to the comfort of the patient. Not only the presence of albumin and casts in the urine should be determined, but the specific gravity, the urea excretion, and, above all, the amount of urine passed should be carefully noted. For urinary insufficiency no better remedy can be found than continuous enteroclysis with decinormal saline solution at a temperature of 110° F., which not only aids renal elimination but is a cardiac stimulant of no mean importance.

This brief outline gives only the salient points which should be considered in the treatment of adults suffering from epidemic influenza. The important matters to be avoided seem to be (1) opium and (2) all measures which depress the circulation. Furthermore we should feel that, although we are dealing with an infection which is severe for a time, it is soon past and should, when carefully treated, leave no traces when it occurs in a healthy individual. It is epidemic influenza in old alcoholics, in diabetics, in persons suffering from arterial, cardiac or renal degeneration, and in old age, that our anxieties are awakened; but with avoidance of all depressing measures and a consideration not of symptoms but of the general aspect of the patient, *the treatment of the disease and of the patient,* success follows in a very large percentage of our cases.

751 Madison Avenue.

A NOTE CONCERNING THE TREATMENT OF INFLUENZA BY THE EMPLOYMENT OF HYDROPATHY.

By E. L. SHURLY, M.D.,
OF DETROIT, MICHIGAN.

A DISEASE so common during the autumn, winter and spring seasons as influenza, and one presenting such different degrees of severity and complications cannot fail to enlist at all times the lively interest of the medical practitioner. Its symptomatology is usually typical in the first

stage or onset, although its course is irregular. Consequently its therapy calls for the exercise of good judgment in the selection of remedial agents. As before mentioned the first stage or onset is generally quite typical exhibiting a vasomotor disturbance represented by cephalalgia, coryza, faucitis and bronchitis. But soon after this other mucous membranes, one or more of the viscera, or the nervous system, may so participate as to change materially the phase of the case.

Whether the infection be at first local, and then general, is a question which need not detain us now. Suffice it to say that a disturbance of the upper respiratory mucous membrane of a neurotic and inflammatory nature is usually presented, and, from a therapeutic standpoint, whether it is due to the direct irritation of the morbific agent or whether this phenomenon is a salutory reaction on the part of Nature designed for the elimination or limitation of the infection is a question that ought not to deter us from prompt action, because it is obvious that an apparatus like the respiratory apparatus is in danger of serious injury, whether it be the seat of primary infection or whether it be the part selected for the elimination of the poison or its products in this disease. Moreover, we must recollect that the intensity of the first stage may determine serious inflammation and suppuration of the accessory cavities of the nose and of the ears as well as of the pulmonary apparatus itself, while the second stage may be characterized by serious neuropathies or visceral disease which may either prove speedily fatal or leave some distressing or incurable chronic ailment. Therefore even mild cases of influenza should not be left wholly to Nature for relief.

The first therapeutic indication should be to assist Nature in the elimination of the infection and in the modification of the action on the ganglionic nervous system. The accompaniment of this desideratum without endangering the life of the patient is not always easy—especially when the attack is tolerably severe; nevertheless a judicious conservatism should always be maintained. The well-known physiological sympathy between the mucous membranes and skin may in this instance he profitably brought into action by persistently stimulating the function of the latter apparatus. On account of the tendency to asthenia this cannot always be safely done by the employment of the so-called cardiac depressants or such diaphoretics as pilocarpin, antimony, etc., but it may be safely accomplished in nearly all cases by the persistent use of the hot-water bath, steam bath, or hot pack, in conjunction with quinine and mild anodynes. These should be used during the first stage quite freely, the patient may, however, receive a moderate dose of hydrargyri chloridum mite with sodium bicarbonate in the beginning, to be followed by a saline draught. He should he confined in a warm room as long as necessary and treated with hot-water baths, steam baths, or hot packs about once in two, three or four hours until free diaphoresis is established. This condition may be maintained by frequently administering hot bland or acid drinks.

When not contraindicated by some unusual condition of either the cardiac apparatus or central nervous system, the patient may be treated preferably by a series of steam baths which may be easily given by wrapping him in a blanket around and up to the neck and seating him upon a cane-seated or other chair with perforated bottom under which a vessel containing at least a gallon of very hot water is placed, then so arranging the blankets that the steam emanating from the vessel may rise and fill the space between his body and the blankets. This position may be maintained by the patient for a period varying from three to six minutes or until perspiration starts or the patient complains of faintness, when he is to be placed in bed (previously warmed) and wrapped in the same blankets that enclosed him while on the chair. This having been done moderately warm drinks may be administered, if desirable, to quench thirst and still further favor diaphoresis. If a hot-air bath is preferred, an alcohol lamp instead of the vessel of hot water is to be placed under the chair. When for any reason it is deemed inadvisable for the patient to sit up in the foregoing manner, the hot pack may be substituted. This manipulation is accomplished by placing under the bed-covering a number of hot bottles (rubber or glass bottles filled with very hot water) or hot flatirons, or bricks. These may be frequently changed until free perspiration is brought about. The practice of turning steam from a tea-kettle or other vessel directly under the bedclothes should be avoided because of the danger of irritating the skin of the patient by the too direct contact of steam. Another objection to this method, that of wetting of the bedclothes, is not an important one, inasmuch as a little dry rubbing with a towel or the subsequent placing of a few hot water bottles in the bed will readily prevent the chilling of the patient. Hot-water packs applied to various parts of the body are very useful substitutes for the more thorough application of the steam or hot bath.

The employment of the cold pack should take precedence over hot baths, etc., whenever the temperature is very high, for in such cases the leading therapeutic indication is to reduce the temperature from a dangerous to a safe degree, and then follow with hypodermic injections of normal saline solution, one ounce every hour until diuresis or diaphoresis has become established. By these measures the skin may be made to greatly assist in eliminating the poison, and also serve an important part toward preventing dangerous visceral congestions. Of course, if the physician is called in at a late stage of the disease, these measures will be inadvisable. Supposing, however, that the case has been seen early and these proceedings have been adopted with good effect, then quinine in three-grain doses should be given every two hours alone or

with opium or paregoric until the physiological effects are manifested. Especially to allay pain and distress should tinctura opii camphorata or opium be administered in good doses until the cough or other irritation abates, and expectoration has become established. This drug will be found safe and far preferable to any other as an anodyne.

Such a plan of treatment will not only modify the first stage of the disease, but will often cut short its course and prevent the subsequent events constituting the second stage, such as ethmoiditis, visceral inflammations, bronchitis, catarrhal pneumonia, etc. For the relief of debility and nervous perturbation, following the first stage, the administration of phosphorus (gr. 1/100) in capsule, in oil, will be signally effective toward giving tone to the system and assisting in the recovery of the normal metabolism. Strychnine, also, is highly useful in this connection as a general nerve tonic. Complications and sequelæ which may arise must be treated, of course, according to the circumstances of the case.

Although there are cases of asthenic character which admit of the use of the coal-tar products, their employment generally will be found inadmissible in the treatment of influenza.

32 Adams Avenue, West.

CLINICAL MEMORANDUM.

INFANTILE GRIP WITH UNUSUAL TEMPERATURE RANGE.

By L. E. LA FÉTRA, M.D.,
OF NEW YORK.

During infancy temperatures above 105° F. are not at all unusual; but rectal temperatures below 97° F. are rarely noted in the course of febrile disease. Slight ailments may readily produce high temperatures in the young, but subnormal temperatures seem to indicate a profound disturbance of the child's metabolism, and are produced by severe infections, such as grip, malaria and pyemia. The case reported presents an unusual combination of very high and very low temperatures, along with some other noteworthy features.

The patient, a fine girl baby thirteen and a half months old and weighing twenty-three and a half pounds, had been perfectly well until February 27, 1899. That morning she had a sudden rise of temperature to 103° F., without vomiting or convulsions: when seen in the afternoon there was rapid, labored breathing and a temperature of 103.8° F. It was evident that she had a pneumonia, although the signs were not clear; but the next day there was plainly a consolidation of the right upper lobe. No other lobe became involved, and the disease pursued a typical course for pure lobar pneumonia in infancy, the defervescence occurring by lysis, as shown in Chart I., and the lung clearing up completely in less than two weeks. The only treatment was the application every three hours for twenty minutes of cold compresses wrung out of salt water at 70° F. The baby stood the attack well, losing only half a pound during the two weeks. On March 11th she was playful, had a good appetite, wanted to get out of bed, and seemed thoroughly convalescent.

But early on the morning of March 13th, without any apparent cause, the baby seemed profoundly prostrated, with her skin cold and "all goose-flesh," and the temperature was found to be only 97° F. Later that day it was 99.4° F., and then it began the startling and erratic course shown in Chart II. On March 14th 103.8° F. was the highest record, and it seemed probable that the lung was being attacked a second time by the pneumococcus. The next afternoon, however, the record stood at 97.6° F., but by midnight it was at 106° F., and the same high range was reached again on March 16th at 6 P. M. In the twenty-one hours following there was a fall of *nine degrees* to 97° F. In the next thirty-six hours there was an excursion up to 105.2° F. and down again to 94.6°, the last being a drop of *ten and a half degrees in twenty-one hours*. For the next three days the fever remained fairly high, but at 1 A. M. on March 22d the lowest observation was made, a temperature of 94.4° F.

The treatment had been merely symptomatic and supporting, so that the falls in the temperature were not to be ascribed to antipyretic drugs. Along with the peculiar temperature, there were great prostration, almost complete anorexia, and a mumbling delirium when the temperature was high. The emaciation was rapid, due jointly to the high temperature and the refusal of food, the loss in weight averaging over three-quarters of a pound per day. There was no pain nor tenderness, no cough nor any catarrhal discharge from the eyes, nose or bowels.

The case was a puzzling one, for in the wake of pneumonia such violent excursions of temperature suggested empyema or some other pus process, such as pyelitis or pyemia. The physical signs in the abdomen, chest and throat were negative, and there was no tenderness around the ears. The urine showed no pus-cells nor any reaction for peptones. Other possibilities then left were malaria and grip. Careful and repeated examinations of the blood for malarial organisms proved negative, and, as already stated, there was no enlargement of the spleen. The diagnosis of grip, therefore, was made by exclusion. It is regretted that no search was made for the Pfeiffer bacillus, even though this germ is not always found in all cases of a grip epidemic. The correctness of the diagnosis was confirmed, however, by the subsequent history.

On March 22d Dr. Holt saw the case with me in consultation, and advised immediate removal to some country place where there were no cases of grip. Lakewood was at that time such a place, and accordingly the baby was taken there on March 24th. A rapid change in the type of

the fever was evident. At no time after the change of air did the temperature rise above 99.2° F, nor fall below 96.4° F. After the sixth day in the country the temperature was practically normal. From the time of arrival improvement in the general condition began, and the child increased rapidly in weight so that at

moval from the house was followed by rapid return to health, and there has been no third attack. As a result of this experience with sulphur fumigation, I now insist that formaldehyde be used thoroughly to disinfect every room in which a case of grip has occurred, and thus far I have had no reinfections.

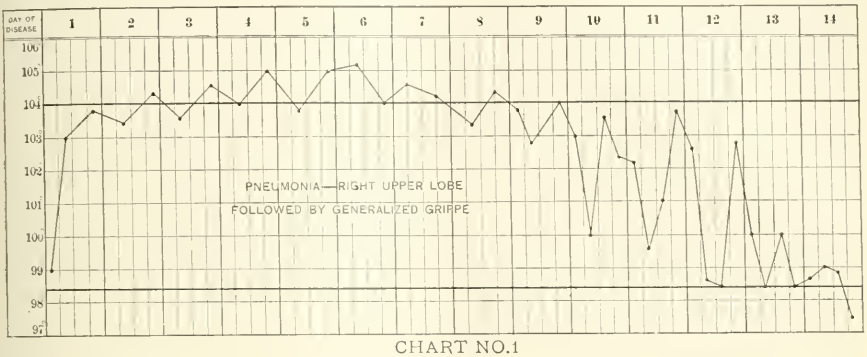

CHART NO.1

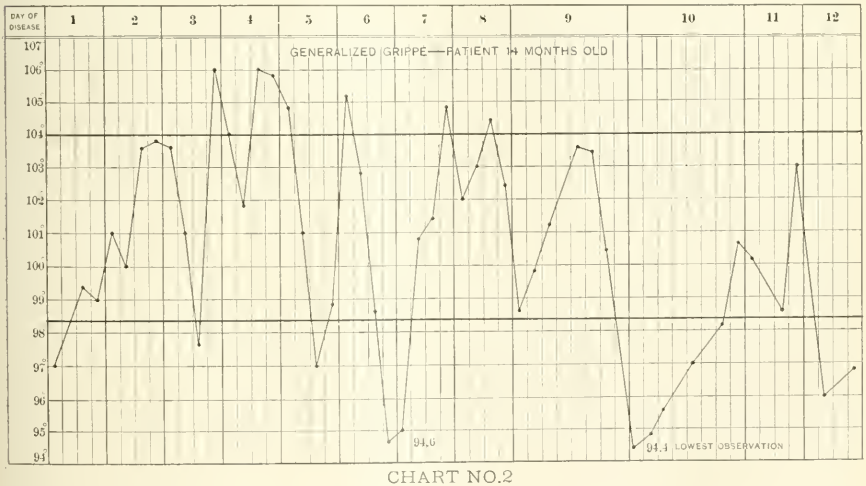

CHART NO.2

the end of four weeks she had almost entirely regained the nine pounds lost during her eleven days' illness.

While the family was in the country the house was fumigated with sulphur and thoroughly aired, so that in the fall when the family returned it was thought safe for the baby to be put in the same nursery. In less than two weeks she had a second attack of the grip, but this time the course of the disease was milder, the temperature ranging only from 98° to 105° F. Permanent re-

The particular features of interest in the case are as follows:

1. The very low temperature, 94.4° F., showing profound infection.

2. The wide excursions of temperature, a fall of ten and a half degrees being noted in one instance.

3. The efficacy of change of air as the sole curative treatment.

4. Retention of the grip germ in the house for several months, in spite of sulphur fumigation.

MEDICAL PROGRESS.

Value of Oliver's Symptom.—Downward or lateral pulsation of the larynx has been frequently described as a symptom pathognomonic of aortic aneurisms. F. Jessen (*Münch. med. Woch.*, Nov. 6, 1900), however, cites a case in which the sign was distinctly present and where the autopsy disclosed a large round-cell sarcoma of the mediastinum which strongly compressed the arch of the aorta against the trachea and esophagus. Conversely, the diagnosis mediastinal growth had been made in a second case in which after death an aortic aneurism was found which was closely adherent to the trachea. Oliver's sign thus gives but little help in the differential diagnosis between both disorders.

Purulent Synovitis of the Large Joints.—The importance of the time and methods of treating this condition are thus summarized by O. Hartmann (*Deut. Zeitschr. f. Chir.*, Bd. 57, Hft. 3 and 4). In the earliest stages of inflammation of the knee-joint the custom at the clinic in Jena is simple aspiration, the most thorough possible evacuation and the injection of five-per-cent. carbolic acid solution. When the condition is more advanced trochar and cannula are used to empty the joint of pus and rubber drain tubes are inserted through the large punctures. In more severe infections the joint is opened as in the Volkmann resection, omitting division of the quadriceps tendon. Thus very thorough drainage is obtained. If this fails, by simply sawing through the patella a full resection is possible at ease. Abscess of the calf is handled successfully by cutting out the head of the fibula and drainage posteriorly. If to the abscess deep burrowing of the pus and tibial osteomyelitis are added, amputation is indicated. These openings into the joint may be followed by partial or complete failure of function. In one case with an unhealed wound the patient showed 25 per cent. of full function. By improper after-treatment this advantage was lost. It is precisely the after treatment that is all important. When the ankle is moderately involved, curved axial incisions behind each malleolus will aid. In worse cases the incisions of König added each side of the extensores permit through and through drainage. When such interference has failed and pus is spreading, before thinking of a low leg amputation, a resection through these incisions may be done or after the manner of Langenbeck and Hüter. In the adult the hip always needs resection. In children, when the pus has not burrowed through the adductores, the head of the femur is carefully cleaned and the acetabulum and capsule drained posteriorly. The wrist offers best prognosis under resection. Pus in the elbow and shoulder have occurred at this clinic so rarely that the author can offer no well-proved procedure for treatment, since several have been tried and none yet selected for its great success.

Hand Disinfection.—F. Schenk and G. Zanfal (*Münch. med. Woch.*, Nov. 6, 1900) come to the following conclusions with regard to the best methods for disinfecting the hands: (1) The mechanical cleansing is done more efficiently with sand soap than with soft soap and brush. (2) This is also true for the field of operation. (3) The mechanical cleansing should last five minutes, to be followed by washing for three minutes in one of the following solutions: Sublimate, 1-1000; mercury oxycyanide, 2-1000; or ethylendiamine mercury citrate, 1-1000. In all cases the solutions should be hot.

Colostomy.—In the interests of simplicity and brevity H. Hartmann (*Revue de Chir.*, Nov., 1900) has brought out the following technic which is claimed to avoid prolapse of the artificial rectum and anus, cicatricial contracture of the orifice, protrusion of hernias, absolute incontinence, and escape of feces into the lower loop, all or any one, so common in the ordinary artificial anus. Through a ten-centimeter incision, two centimeters within the anterior superior iliac spine, centered upon and perpendicular to a line joining the spine and the umbilicus, the abdomen is opened in the intramuscular method of McBurney. A loop of the descending and sigmoid colon is drawn far out of the wound, the lower loop being as short as possible and the upper limb redundant. When the mesentery is defective, one is created by stripping off parietal peritoneum from the fossa and suturing it over the gut posteriorily. The mesentery, normal or artificial, is then transfixed by a large strip of iodoform gauze and the same material is packed about the bowel between it and the lips of the wound. No sutures whatever are used, and ordinary sterile gauze dressing is applied. After twenty-four or forty-eight hours a small opening is burned through the longitudinal band (which should always be arranged so as to traverse centrally, anteriorly and from above downward over the loop), opposite the upper segment of the protruding bowel near its emergence. On the sixth or seventh day the packing about the loop is taken off and on the tenth day the supporting gauze is removed, first by drawing it upward and then cutting it across close to the mesentery, thus the large, matted extremities, often soiled with feces, are not pulled through the depths of the wound. The function of this anus is almost always excellent and recovery from the operation simple.

Fibroids in Non-Pregnant Uterus.—After discussing the different methods of treatment of this condition, E. F. Fish (*Am. Jour. Obstetrics*, Nov., 1900) says that, from personal observation, *myomectomy* is the operation of choice (1) when the tumor is pedunculated; (2) when it is single, whether subserous, interstitial, or submucous, and can be enucleated without loss of

uterine tissue, and the tumor cavity can be closed and covered with peritoneum; (3) when the desire for an heir outweighs all other considerations. That *hysterectomy* is indicated (1) when the tumor involves so much of the uterus that a cavity too large to be properly closed and covered with peritoneum would follow its removal; (2) when several tumors exist, especially little nodules; (3) when the adnexa are diseased to such an extent that they must be sacrificed; (4) when the disease ceases to be local; (5) when hemorrhage, pressure, or great pain is a persistent symptom; (6) whenever malignancy is suspected or the tumor is of rapid growth; (7) after change of life. That *palliative treatment* is indicated (1) when the patient is very much reduced from loss of blood, as a prelude to radical cure; (2) when the existence of chronic nephritis, diabetes, tuberculosis, or other constitutional disease forbids radical cure; (3) when the patient is past forty years of age, the tumor small, the main annoyance hemorrhage, and she is desirous of awaiting the effect of the menopause.

Treatment of Typhoid.—The treatment of typhoid fever at New York Hospital is detailed by F. C. Keays (*Med. Rec.*, Dec. 1, 1900). The routine treatment consists regularly of the use of the tub-bath given every three hours when the temperature is 103° F. or over. The bath is usually started about 80° F. and run down to 70° F. or 65° F. for a period of ten to fifteen minutes. When tub-baths are not taken well, alcohol sponge-baths are used, the alcohol being cooled by ice. When there is a contraindication to baths, acetanilid, grs. iij, may be used every three hours. For sleeplessness combinations of trional, grs. xv, with codeine, gr. j, work well. The baths generally prevent delirium. Whisky is efficacious, especially in alcoholic patients. Hypnotics are frequently given by rectum in very delirious patients. Nausea and vomiting are relieved by milk modified with cerium oxalate, grs. v, and sodium bicarbonate, grs. x, to milk, ℥ viij. Distention is treated by turpentine stupes, rectal tube and turpentine by mouth, ♏ v-x, or enemata. Whisky and digitalis are used as heart stimulants as indicated. If hemorrhage appears, the patient is kept quiet, cold is applied to abdomen, saline enemata given to replace the blood lost or saline infusions are used. Milk forms the diet during the course of the disease, but kumyss, broths and beef-juice are frequently given. As soon as the temperature reaches normal the diet is rapidly increased. As little medication as possible is given during the course and convalescence.

Gonorrheal Rheumatism.—In an interesting account, based upon an analysis of 250 cases of gonorrheal rheumatism, G. Lorimer (*Quarterly Med. Jour.*, Nov., 1900) finds that the ages ranged from 17 to 58 and that by far the largest number of patients were males. This he explains is more due to difficulties present in recognizing the disease or the chronic discharge in females. The time from the onset of the gonorrhea to the occurrence of the arthritis averages three months in women and six weeks in men. A hereditary tendency to rheumatism was observed in so few cases as to be merely coincidental. Pyrexia was generally present, usually of subacute type, though acute and chronic cases were not infrequent. In two instances, the pyrexia was distinctly hectic in type. The absence of a tendency in the arthritis to shift from joint to joint was a characteristic feature except in those cases in which the initial fever was acute. The degree of pyrexia was observed to regulate the amount of perspiration and the concentration of the urine and the peculiar acid odor of the perspiration of acute rheumatism was always absent. The absence of hyperinosis and oligocythemia was a fairly destructive feature, but seemed to depend more on the degree of fever. Cardiac complications were rarely present. There was no evidence to show that previous attacks of rheumatism had any influence in increasing the liability to gonorrheal arthritis except in the acute type. The order of frequency of involvement of joints was as follows: Knees, ankles, hands and wrists, hips, shoulders, temporomaxillary joints, cervical joints and sternoclavicular joints. Other complicating affections were non-purulent conjunctivitis, sclerotitis and iritis, neuralgia of the lumbar plexus and of the sciatic nerve, myalgia and painful affections of the fasciæ, especially the plantar. There was generally noticed a much greater liability to chronic articular changes than in ordinary rheumatism. Muscular atrophy, usually proceeding *pari passu* with the arthritis, was occasionally observed. Salicylates only proved of value in those cases in which the onset was acute, in which case their efficacy disappeared with the advent of subacute symptoms. In conclusion the author asserts that the explanation of gonorrheal rheumatism is still *sub judice*, but he inclines toward the toxemic theory.

Hereditary Aspect of Pernicious Anemia.—Many of the diseases of the human organism are now supposed to result from an inherited feeble resistance to certain deleterious agents. In muscular dystrophies the muscular system is congenitally short-lived. In hereditary chorea and certain forms of dementia the central nervous system begins to degenerate while the remainder of the body may be in excellent condition and the patient be in the prime of life. C. L. Dana (*Med. Rec.*, Dec. 1, 1900) reports a case of pernicious anemia in which the family history is very suggestive of a possible teratological defect or weakness in the blood-making organs. The patient, aged forty-seven years, was the thirteenth of fourteen children, all of whom were born dead except one brother next in age to himself, who died from pneumonia. Both father and mother were healthy, but the patient was born when the

mother was about forty years old. No history of syphilis could be obtained, and this trouble rarely causes more than three or four miscarriages. The history of the family shows an extraordinary lack of vitality on the part of the generation to which the patient belonged, and, as frequently happens in a long series of still-born children, those who finally survive have teratological defects, it is believed that this congenital weakness was expressed in the patient reported by the early degeneration of his blood-producing tissues.

Yohimbin, a New Aphrodisiac.—Yohimbin, the alkaloid of the bark of a tree endemic in West Africa, has been found by L. Löwy (*Therap. Monatshft.*, Nov., 1900) to produce marked congestion of the sexual organs and possibly also new formation of spermatozoa, without, however, irritating the kidneys as is the case with cantharides. In the impotence of tabes and other organic diseases no influence on sexual function could be detected; on the other hand, irritable weakness or paralytic impotence was favorably affected. The proper dose is 5-10 minims of a one-per-cent. solution of the hydrochlorate three times daily.

Retroperitoneal Fibromata of the Uterus.—After considerable experience the following results of surgical attack upon these tumors are presented by D. de Ott (*La Gynécol.*, Oct. 15, 1900). He handled his cases either by the abdominal or the vaginal route. In the former cases after free exposure of the deep field, the peritoneum was divided longitudinally and stripped in two broad flaps off the tumor. The mass was then enucleated or excised clean and the cavity packed carefully with gauze, the end of which emerged through the vaginal vault. The abdominal wound was closed by tier sutures and the vagina was lightly packed with gauze. Of 189 examples of this procedure 20 were fatal (10.6 per cent.). In his later series the vaginal route in front or back of the cervix uteri was always used. Generally the enucleation could be done *en masse* and extraperitoneally; occasionally it had to be done *en morcellement* and the serosa divided. The rest of the technic was the same as the previous manner. By the vagina he has also removed submucous fibroids by dividing the posterior wall of the body into its cavity enucleating and then suturing. Of 193 cases only 6 died (3.1 per cent.). His conclusion is that the vaginal approach should always be considered before resorting to laparotomy.

Gastroptosis.—The condition of gastroptosis depends so much for its symptoms upon the accompanying lesions of the stomach, such as atony, gastritis, and disorders of sensation and secretion, that no clear picture of the condition has yet been painted. G. R. Lockwood (*Med. Rec.*, Dec. 1, 1900) reviews forty-five cases that he has had under observation in private practice and urges that it is not the position or size of the stomach which causes the disturbance, but the ability of the organ to digest and pass the food on into the intestine. In ten cases without atony there were practically no symptoms, but in those cases in which atony became more marked the symptoms were so constant and severe that the patients were incapacitated for work. He believes that the displacement of the stomach is a predisposing cause of a variety of gastric neuroses which are usually induced by definite mental or physical strain and points out that all his cases of marked atony were decidedly neurasthenic. The gastric acidity is increased in direct proportion to the atony unless counteracted by gastritis which, by reducing the acidity, often lessens the severity of the symptoms. In a large number of cases inattention to the conditions of atony, of neurosis and of gastric secretions has led to an unsuitable, insufficient diet which reacts upon the general condition and the disturbances within the stomach. The amount of gastric distress does not depend upon the quantity or quality of the food and if the irritation be allayed the more they eat the better. A combination of bromide, grs. vj-viij, chloral, grs. iij, resorcin, grs. iij, and chloroform-water, dram j, with gtts. vj of spirits of anise, ounces iv, to disguise the taste, has seemed the most serviceable. The Neptune girdle is a most efficient means of soothing gastric irritability. Two layers of flannel, large enough to cover the entire abdomen, are wrung out of hot water as dry as possible and covered with oiled silk. They are changed twice a day and worn constantly. Mental and physical rest is frequently needed. To reduce the hyperacidity frequent feedings of mixed foods and alkalies after meals are used, such as magnesia, magnesium carbonate, or bismuth.

Actinomycosis Hominis.—The following clinical data are given by J. C. Oliver (*Annals of Surgery*, Oct., 1900) of a case of actinomycosis of the head and neck. Jeweler, forty-nine years old; carcinoma in immediate family; no syphilis; six years ago while suffering from purulent discharge about the teeth a papillomatous, ulcerating, non-indurated patch developed just inside the vermilion border of the left angle of the mouth, with a few metastases, all healing after scraping and leaving a white scar. All the lower teeth were extracted for the pyorrhea except the last molars, which served as anchors for the false teeth-plate. In June, 1899, an ulcer developed opposite one of the clamps in the cheek, spreading after the exciting cause was removed, curetted July 2d following with some improvement. The scrapings were negative as to carcinoma and tuberculosis and hence syphilis was diagnosed in consultation. Iodism was at once induced and maintained, without local relief. Pain now appeared and the ulcer extended to the lips. Late in September enlargements beneath the maxilla appeared. October 7th deep but futile scraping of the ulcer. Epithelioma was now

diagnosed, in the presence of hard masses in the neck, about the body and angle of the lower jaw. Radical operation was now declined. A little later the masses softened and then fluctuated, were incised and evacuated of suspicious actinomycotic pus, but microscopically negative. January 4, 1900, radical ablation was done, but the growth appeared in the incisions, sinuses resulted and discharge of the thin green-yellow curdy pus. Edema of the adnexa began and the nose and throat, with dysphagia, were involved. Finally in the discharge of one abscess the streptothrix and ray fungi after prolonged search were found. Potassium iodide was now pushed, but without promising results. Death occurred March 3, 1900, after a copious hemorrhage, which was stopped by packing, but overtaxed the patient's strength.

Pulmonary Emphysema and Nasal Occlusion.—Dr. Cousteau (*Journal of Laryngology,* Nov., 1900) gives results of experiments on rabbits. One nostril was obliterated and rabbits killed seven months after. Lungs were emphysematous, here and there transparent vesicles, size of a pin's head, appearing in white raised plaques. Under microscope alveolar walls were seen thinned and even burst in places. Similar result was obtained in twelve days by obliterating both nostrils in a rabbit. The importance of maintaining permeability of the nose depends on the rapidity with which even incomplete stenosis of the nose could give rise to pulmonary emphysema.

Tonsils and Adenoids.—From 1892 to 1900 Cuvellier (*Jour. of Laryngology,* Nov., 1900) treated 2785 children at the Hôpital des Enfants Malades. Of these 569 were simple tonsillar hypertrophy, 1060 simple adenoids, and 1156 tonsillar hypertrophy with adenoids. Medium age five to seven years. Adenoids greatly preponderating. Tonsils removed by tonsillotomy when pedunculate, piece by piece when flat or lacunar, did not recur. Adenoids were found in (1) respiratory, (2) auricular and (3) mixed types—2019 cases giving 1214 of respiratory, 75 auricular and 730 mixed. Operation was obligatory for removal. Complications were rare. There were no contraindications except hemophilia. Radically removed, no recurrence.

Bacteriological Diagnosis of Diphtheria.—"Not every membranous sore throat, or laryngitis, is due to infection by the Klebs-Löffler bacillus" and "many mild and non-membranous sore throats do depend upon infection by this organism. It is the presence or absence of the specific bacillus which is now held to decide whether or not a given case is to be regarded as one of diphtheria." So says Dr. Andrews, Pathologist of St. Bartholomew's Hospital (*Jour. Laryngolog.,* Nov., 1900). The diphtheria bacillus has tendency toward "clubbed" form, stains irregularly, owing to metachromatic granules in their protoplasm, has no spore-formation, has no flagella, is non-motile, stains by Gram's method, and does not liquefy gelatin. The size and form of the bacillus admits of variation and the non-pathogenic bacilli may resemble exactly the pathogenic and are not to be distinguished thus, for example, the xerosis bacillus. The acid-producing character of the pathogenic form is confirmatory, but not reliable. The death of an inoculated guinea-pig with the characteristic symptoms is a valuable diagnostic aid, but not absolute. Absolute criteria of pathogenicity may be unattainable. Given requisite time for experiment the pathologist can recognize pathogenic diphtheria bacilli, "but ultimate diagnosis must always rest with the physician who knows all about the case." "Virulent bacilli may be present in the throats of healthy persons who have been in contact with unhealthy persons." . . . "Bacilli like diphtheria may be present in the healthy nose." The bacteriologist should always be given clinical details with material furnished him. "It has happened to me to fail in demonstrating the bacilli during the life in a case of undoubted clinical diphtheria." Negative results are much less conclusive than positive ones.

Retroflexion of the Uterus.—E. Schroeder (*Zeitschrift f. Geburtshülfe und Gynäkol.,* B. 43, H. 3) in view of the frequency of this condition without symptoms publishes the following instructive statistics: First, 90 nulliparæ with 23 retroversions and 7 retroflexions. Of these, the first group, 74, had no pains in the lower segment of the body, although 19 had retroversion and 5 retroflexion; 25 were virgins of whom 8 had version and 2 flexion; the other 49 were married or had had intercourse, 11 showing the backward version and 3 flexion. The second group with symptoms, chiefly pain in the lower part of the trunk, comprised 16 patients with 4 suffering from version and 2 from flexion; among them 3 were virgins with 1 retroflexion uteri and 13 were not virgins, 4 presenting version and 1 flexion. Second, he investigated parous women previous to menopause with these statistics, in all 276 cases, 40 versions and 31 flexions. The group without symptoms was again the larger, 191 with 25 versions and 17 flexions. The series having trouble comprised 89 women, 15 with version, 14 with flexion. His last class included all women past menopause, 45 total, 13 versions, 4 flexions, namely, 38 with no pain, among these 9 versions and 4 flexions, and 7 with pain in 4 individuals with retroversio uteri.

Phlegmasia Alba Dolens.—After a thorough trial of wet dressings of lead and opium and aluminum acetate upon a well-marked case of this condition, A. Herzfield (*N. Y. Med. Jour.,* Dec. 1, 1900) employed Unguentum Credé, fifteen grams, rubbed into the affected extremity daily for two weeks, and found that it had a most beneficial effect which was noticed almost immediately after this method of treatment was begun.

THERAPEUTIC HINTS.

Purulent Pericarditis.—This is a not uncommon accompaniment of prolonged productive pneumonias, according to Bard and Machard, and should be continually watched for. The diagnosis being proven by exploratory puncture, a transverse incision, 8 to 10 cm. (3 to 4 in.) long, is made over the fifth left costal cartilage, beginning a finger's breadth from the sternum. The cartilage is removed, the internal mammary cut between two ligatures, and the pericardium opened and evacuated. After thorough lavage a drain is left in the lower angle and the wound sutured.—*Revue médicale de la Suisse Romande.*

Asthma.—Of palliative remedies, writes W. H. Thomson, the first place belongs to the group containing belladonna, hyoscyamus, stramonium, and duboisin. Hot coffee, very strong, taken on an empty stomach and sipped, acts as a stimulant nervine. Taken after eating it aggravates the asthma by interfering with digestion. Next in value are alcohol, the ethers, chloral, and opium. The fumes of potassium nitrate are very effective. But these remedies do not cure, and it must be remembered that asthma is at no time absent from the asthmatic. In hay asthma the inhalation of carbolized steam or turpentine vapor, twice a day for months, may produce a permanent change in the sensitive mucous membrane. A dose of potassium bromide, grams 2.0 (gr. xxx), with Hoffmann's anodyne, grams 4.0 (ʒ j), at bedtime, will often ward off an attack. Many cases of bronchitic asthma are relieved by wearing light under-flannel, which prevents the condensation of perspiration and susceptibility to draughts. Peptic asthma is especially influenced by the state of the alimentary canal. The best meal should be taken early in the day and only the lightest supper allowed at night. Bismuth with powdered calumba or sodium benzoate will often prevent an attack. Of remedies with lasting and curative power arsenic and potassium iodide are by far the best, and they should be combined with nervines and correctives. Of the latter, quinine and cod-liver oil are best with arsenic, and phosphorus and tincture of iron with iodide. A good prescription is:

℞ Potass. iodid..... 6.0 (ʒ iss)
Liq. pot. arsen..... 4.0 (ʒ j)
Spt. aether. comp.....75.0 (ʒ iiss)
Tinct. bellad..... 8.0 (ʒ ij)
Syr. aurant. cort....ad 180.0 (ʒ vj)
M. et sig.: Two teaspoonfuls in water an hour after meals.—*Reference Handbook of the Medical Sciences.*

Secondary Anemia.—According to R. C. Cabot, many cases recover with no treatment but the removal of the cause to which the anemia is secondary; as a rule, however, recovery is considerably hastened by therapeutic measures. There is no especial appropriate diet, but what is needed is a full and varied nutrition, which includes plenty of red meat. The digestion may need attention, and not infrequently there is gastric hypersecretion. Diarrhea or constipation are treated symptomatically. Climatic change is of service, especially high altitudes, where the rapid increase in blood-corpuscles appears to be not entirely transitory. Blaud's pill is the best form of iron, two 0.3 gram (5 gr.) pills, three times a day, increased in a week or so to three pills. In the rare cases in which Blaud's are not well borne or do not increase the hemoglobin rapidly enough, one of the organic preparations, such as ferratin, should be tried. The tincture of the chloride of iron should rarely, if ever, be given, on account of its strong tendency to produce constipation, its deleterious effects upon the teeth, and its disagreeable taste. All preparations of iron should be given after meals. Occasionally arsenic is useful, especially in the severer grades of anemia. It is best given as Fowler's solution, two drops after meals; well diluted, increased one drop daily until the physiological limit is reached, as shown by the occurrence of itching or burning of the eyelids, nausea, or vomiting.—*The Reference Handbook of the Medical Sciences.*

Dewees' Emmenagogue Mixture.—This preparation H. C. Wood relies upon almost exclusively in the treatment of simple atonic amenorrhea. The amount of iron should be regulated according to the anemia; of the aloes, according to the bowels; of the cantharides, according to the susceptibility of the urinary organs. The formula is:

℞ Tinct. ferri chloridi..... 12.0 (ʒ iij)
Tinct. cantharidis..... 4.0 (ʒ j)
Tinct. aloes..... 15.0 (ʒ ss)
Tinct. guaiaci ammon.... 45.0 (ʒ iss)
Syrupi q. s.....ad. 180.0 (ʒ vj)
M. et sig.: Tablespoonful three times a day.—*Therapeutics, Its Principles and Practice.*

Treatment of Chorea by Arsenic and Bromides.—There is a tendency to-day to treat ordinary chorea by very large doses of arsenic. Bechterew does not believe in this practice. He thinks that excellent results can be obtained by giving the bromides at the same time with reasonable doses of arsenic. He prescribes Fowler's solution in ordinary doses, according to the age and tolerance of the little patient, and at the same time gives the following mixture:

℞ Adonis vernalis.... 2.50 (♏xxxviij)
Aqua .....180.0 (ʒviiiss)
Ft. Infusion.
Then add:
Bromide of potassium.
Bromide of sodium.aa 4.5 (grs. lxviij)
Antipyrin ..... 2.0 (grs. xxx)
Simple syrup .....16.0 (ʒiv)
M. Sig. A teaspoonful 3 or 4 times a day to a child of ten years. *La Presse médicale,* Sept. 22, 1900.

The Medical News.

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OF MEDICAL SCIENCE.

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SATURDAY, DECEMBER 15, 1900.

CUI BONO?

One of the most pitiful phases that the practitioner meets in his daily work is the yearning of the sick man to seek after strange gods. The honest physician feels keenly the imputation of self-interest and of incredulity by his patients when he tells them frankly that he believes there is no virtue in a treatment that they are anxious to try; and he never feels more helpless than when he sets before an eager, frightened man some of the broad truths of science on which his treatment is founded, and is met by a recital of the guaranteed cures that have been quoted to him by the advocates of some "system." There is always a physician of a regular school of medicine to back the cure, years of success in foreign lands, untiring fortitude toward the intolerance of narrow-minded doctors, and a list of prominent men whose maladies have been cured after well-known physicians had given them up. To doubt at least a possible efficacy in the face of such overwhelming evidence is but to display that illiberal, jealous spirit of skepticism that the overbelieving too readily apply to the medical profession.

A case in hand will serve to illustrate our point. There has been much said recently about the electrical treatment for tuberculosis. Probably there is hardly a physician in New York who has not at some time cut down his income by sending a tuberculous patient away from his own care to a more favorable locality, and advising him to spend his substance on rest, climate and food, only to find in a short time that same patient back in the city at his old vocation, and putting all his faith and money into some well-advertised cure for consumption. Among all of these the treatment of tuberculosis by electricity has sounded the most plausible to the popular ear. That the germicidal effect of drugs could be made to permeate the lung tissue by cataphoresis was suggested to physicians also, as a new development along well-recognized lines, and the usual appeal for a fair trial on a scientific basis was not denied.

It is characteristic of scientific men, although they are not often credited with such liberality, that they are always willing to test any new idea that may have a shadow of reason in it. Even though they know that certain laws of Nature preclude certain results, yet living in the decade of Argon and the X-rays, they recognize honest, faithful experimentation as the only key to mystery.

With singularly generous motives St. Luke's Hospital of New York consented to experiment upon a method of treatment by electricity of which the claims were: "One hundred per cent. of cures in the incipient stages, 75 per cent. in a secondary stage and 50 per cent. of the cases that would under regular treatment be considered hopeless."

The treatment was given regularly and systematically. Not only were the bacteriological examinations and blood-counts made at the Hospital, but the sputum was sent to the New York City Board of Health, where experiments were made upon guinea-pigs with the supposedly attenuated virus to see whether there was any actual lessening of virulence of the tubercle bacillus.

These experiments were carried on carefully, exactly and hopefully for three months with *absolutely negative results.* None of the changes that were claimed would take place eventuated, from the bacteriological standpoint. The effect of placing the patient in front of the static machine was as ineffectual as placing him before a mirror. None of the patients of the experiment improved any more than did others of like degree of infection on the same good food, regular hours and rest. The unbiased, scientific opinion of all the physicians who assisted at the work at

St. Luke's was, "Nothing in it," as is evidenced by the following circular which is being sent out in answer to all inquiries on the subject: "Replying to your letter, I would say that Mons. Crotte's method of treating tuberculosis by electricity was on trial in this hospital for three months, under the supervision of the Medical Board. Several months ago the Medical Board declared the results to be negative, and asked permission from the Executive Committee to cease their investigations, and to have the apparatus removed from the Hospital. This has since been done."

And yet, as the story goes, the experiments at St. Luke's are being quoted by the advocates of the electrical treatment as conclusive evidence that the method is vouched for and practised by the most reputable hospital in the country. References to them have been made in medical meetings and medical literature, always with the assumption that the test experiments were successful. That such assumptions have been denied and the promulgators of them snubbed makes no difference to those who are sounding the clarion for the cure of tuberculosis by electricity. Their point has been gained.

The public does not hear the authoritative denial of competent physicians, and, if it does, it is easy to say, "Doctors disagree." Thus the suffering patient is imbued with new hope, which leads him to abandon the only possible chance he may have for his life for a course of well advertised treatment, and the physician who has carefully and conscientiously advised him, without considering his own pocket, has to see that hope die when it is too late to follow his advice. What wonder that he signs the death certificate with *Cui bono?* on his lips!

THE THERAPEUTIC VALUE OF PROTARGOL IN DISEASES OF THE EYE.

Since the discovery of protargol in 1897 by the chemist Eichengrün and its introduction as a therapeutic agent by Benario, much literature has accumulated concerning its value in the treatment of certain ocular diseases; and a recent review by Von Sicherer (*Zeitschrift für Augenheilkunde*, September, 1900) is of much interest in showing the remarkable difference of opinion that is entertained regarding it by many experienced and trustworthy observers.

The advantages claimed for protargol are its great germicidal action, its penetrating power, the limited degree of discomfort produced by the applications and the absence of any slough.

The affections of the eye in which the drug seems to have been most generally employed are acute and chronic conjunctivitis of the catarrhal type, purulent conjunctivitis, both gonorrheal and non-gonorrheal, acute and chronic trachoma, blepharitis, suppurative lesions of the cornea and suppurative diseases of the lachrymal duct.

The results obtained from its use have been widely different. Some authors reported cure of the diseases under treatment within a few days' time; others that the results were totally indifferent, and still others that the cases under observation became so much worse that the treatment was necessarily abandoned. Observers also differ much in regard to the strength of the drug to be employed, it having been used from ¼ per cent. (Pflüger) to the pure powder (Darier), though from 20- to 50-per-cent. solutions seem to be those in greatest favor. Those authors reporting the best results claim that a 20-per-cent. solution is about as weak as can be expected to give rise to any benefit and that in very severe cases it must be employed in solutions much stronger. In fact, it is urged by the advocates of protargol that one of the causes of failure among those who report unfavorably concerning its value is the weak solutions that were employed.

Regarding the inefficiency of the drug Lesshafft has directed attention to the fact that in preparing the solutions there frequently occurs, by an excessive heating, a splitting of the silver molecule, making the preparation less active. He states, therefore, that it is best to triturate the powder in a porcelain mortar with as many drops of glycerin as there are decigrams of protargol and then to add cold water drop by drop.

The manner of employing protargol varies somewhat with different observers. Thus, Darier, who was among the earliest to make use of it and who reports most favorably concerning its action, gives the patient a 5-per-cent. solution, to instil into the eye three or four times daily in simple conjunctivitis and as frequently as every half-hour in purulent conjunctivitis, he himself making an application of a 50-per-cent. solution to the everted conjunctiva once or twice daily. In blepharitis and suppurative diseases of the cornea topical applications of the stronger solutions are employed, and it is claimed that though an excessive amount accidentally come in contact with the cornea no injury will result as might be the case from solutions of silver nitrate. Bribosa employs it in the form of 5-per-cent. vapor and most highly

recommends this mode of application, believing it to be far superior to instillations and compresses.

In diseases of the lachrymal duct irrigating with 5- to 50-per-cent. solutions is claimed by some surgeons to bring about a healthy condition of the membrane and a rapid diminution of the amount of the discharge, provided there be present no pathologic condition of the bone (Darier, Messner, Wicherkiewics, Hotz); on the other hand, it is stated (Bistis, Bossalino) that, beyond a slight diminution of the discharge, there is but little improvement. Antonelli advocates the employment of 50-per-cent. protargol sounds, and his claims of excellent results from this method are supported by Bistis.

As a prophylactic measure in ophthalmia neonatorum, most of those who have employed it in the stronger solutions speak well of their results. Cramer reports its favorable employment in 200 cases and Engelmann, who made a comparative study with solutions of silver nitrate, using 20-per-cent. protargol, states that the latter proved superior to the former in every way. On the other hand, Von Ammon and Esmann do not speak so enthusiastically of its value, although it should be added that the latter employed it only in 1- and 2-per-cent solutions.

Concerning the pain and discomfort produced by the instillation or application of protargol there is almost as much difference of opinion as is held regarding its value in the treatment of ocular affections. A review of the literature shows that most observers believe it to be much less painful than solutions of silver nitrate, in fact, producing only a slight, transient burning, but others state that it is fully as painful, if not more so, and that in certain cases the pain from an application is so severe and prolonged as to give rise to the belief that an idiosyncrasy to the drug must exist.

Regarding the countries in which protargol finds its warmest advocates we have France first with Italy a close second. In the United States opinion is greatly divided, as was manifest in a discussion on the subject before the Section on Ophthalmology of the American Medical Association at the last annual meeting. Such men as Hotz, Sutphen, Jackson, Southard, and Connor reported the most favorable results from its employment; on the other hand, De Schweinitz, Wood, Clark, Allport and others were practically agreed upon the remarkable uncertainty of the drug, at times obtaining the most astonishing results from its use and again, under apparently similar circumstances, failing to produce the least improvement of the condition under treatment.

It can be seen, therefore, that the various observations, though covering a large amount of material and originating largely with men of considerable experience, are so widely contradictory in their results that the true value and therapeutic power of protargol in the treatment of ocular diseases cannot be definitely ascertained until much more extended experience is at hand. Of the practical value of the drug there is little question, but problems of idiosyncrasy, dosage, etc., must be solved to give protargol a definite place in ophthalmological practice.

ARSENICAL CONTAMINATION IN BEER.

In the Medical News for December 1st mention was made of a grave epidemic of peripheral neuritis occurring in the district of Manchester, England, due to arsenic-contaminated beer. The early press dispatches contained but few details, but the *British Medical Journal* and *Lancet* for December 1st, just received, give lengthy analyses of the conditions present from which we gather the following short account of one of the most interesting instances of universal poisoning of food and drink on record.

For the past three or four months clinicians in and about Liverpool have noticed an unusual prevalence of multiple neuritis occurring among beer drinkers. This was ascribed to the effects of alcohol until Dr. E. S. Reynolds, assistant physician to the Manchester Royal Infirmary, and visiting physician to the Manchester Union Hospital, became convinced that the features of the disease were different in many particulars from those observed in alcoholic multiple neuritis, and on the 21st of November announced before the Manchester Medical Society the startling fact that he had found arsenic in the beer used by many of the patients and that the neuritis was due for the most part to this toxic agent.

Dr. Reynolds' results have been amply verified since by Drs. Delépine and Tattersall, both of whom had suspected the nature of the peculiar poisoning and had found arsenic in the beer on November 16th, and reports from various parts of Lancashire and the Midland counties indicated that the poisoning was very widespread.

It is gratifying to learn that Drs. Delépine and Tattersall took immediate steps toward ascertaining the source of the poisoning, and on November 23d were able to notify the medical authorities of Manchester and of Salford that one

particular brewing house was using glucose which contained arsenic. Suffice it to say that the brewers themselves took prompt action in notifying all of their customers of the trouble.

From the clinical standpoint many interesting features of the epidemic were brought out. The general aspect of the patients was characteristic. The face was dusky and the eyes watery and the well-known puffiness of the under eyelids marked in many cases. The involvement of the skin was almost universal. This consisted of an irregular pigmentation, often ascribed to dirt, which at times closely suggested the bizarre coloring of Addison's disease. Herpes, erythematous and papular eruptions were common. In some there was a bran-like desquamation of the skin. In others the cuticle was thickened and the nutrition of the nails markedly altered. The nervous system was affected in all cases. Numbness, tingling, pain and cramps with final paresis or paralysis were distinct. Tremor was common. The knee-jerks were diminished or abolished in the greater number of patients. The upper respiratory passages were invariably affected. Coryza or distinct catarrh was universal. The digestive disturbances were of irregular occurrence; diarrhea, epigastric pain, anorexia and vomiting were present in varying degrees. The urinary organs did not seem to participate to any great extent in the poisoning.

It seems probable from the reports from various practitioners in the affected region that this form of poisoning has been going on for six months. Beer drinkers were those generally affected, although according to Dr. Kelynack's note, in one locality, drinkers of stout were also taken ill. The chief sufferers have been the poorer classes, as they are the main consumers of the cheaper varieties of beer. The chemical analyses of the beer showed that the amount of arsenic found varied from 1/100 to 3/10 of a grain to the gallon.

Of the source from which the arsenic was derived much might be said that would have a wide application. It is well known that sulphuric acid is universally used in the manufacture of glucose, which latter is an indispensable agent in the manufacture of beer. This sulphuric acid is generally prepared from iron pyrites which invariably contains a small percentage of arsenic. Thus the chain is complete, arsenic from the pyrites, to the acid, thence to the glucose and to the beer.

What bearing has this on the beer industries of this country? It is said that more glucose is made in the United States than anywhere else, but we are glad to be informed that the commercial glucose supplied to the American trade, largely by the American Refining Company of Chicago, is made from arsenic-free sulphuric acid. In an informal discussion at the last meeting of the Society of Chemical Industry, November 23, 1900, a number of chemists connected with brewing interests in this city came to the conclusion that inasmuch as the sulphuric acid of this country was a superior article that there was little likelihood of there being any danger lurking in American beers.

In view of the fact, however, that glucose is more widely used here than almost anywhere else, it is incumbent on our State analysts to make steadfast efforts to ascertain the presence of poisonous impurities; especially so, since the recent developments which have come to light on the use of glucose as an adulterant in the molasses industry.

ECHOES AND NEWS.

NEW YORK.

Building for Marine Hospital Service.—In Secretary Gage's estimate of expenses of the Government for the coming year $250,000 is asked for a Marine Hospital Building in New York.

Smallpox Situation.—A few more patients suffering from smallpox are found each day. The total number now reaches in the neighborhood of 60. At least 100,000 people have been vaccinated and sore arms are the rule throughout the city. Present indications point to a speedy end of the local epidemic, though isolated cases will probably come to light every now and then for some time to come.

Counter Prescribing and Poisonous Mixtures.—Oscar Epstein, druggist, of One Hundred and Sixty-third Street and Forest Avenue, sold some cough medicine which, it is alleged, caused the death of the infant child of a manufacturer of Trinity Avenue. The Coroner's physician for that district said that the druggist told him that he had been employed in a drug-store in Staten Island, where the proprietor manufactured a cough mixture such as was given to the child. This cough mixture, he told Dr. Reigelmann, contained 80 ounces of laudanum in every 420 ounces. Which is the more guilty person, the druggist who prepared the mixture or the father who bought it, is difficult to determine.

Obituary.—Dr. Edward A. Smith, of No. 105 East Eighteenth Street, died December 10th at the age of seventy-one. Dr. Smith was a member of the Union, Metropolitan, Racquet, and Players' Clubs, and of the Society of Colonial Wars.

Dr. George B. Banks, a prominent physician of Huntington, L. I., died December 11th from rheumatism. He was seventy-five years old. Dr. Banks was at one time President of the Board of Education, and was later Commissioner of Highways. He is survived by three daughters and a son.

Pure Food Movements.—The Board of Health recently opened a war on adulterated molasses which, according to Commissioner Murphy, is being sold throughout the city as the pure article. The action of the board is based on a movement in behalf of pure molasses, the agitation of which is now going on in New Orleans. Wholesale dealers say that so extensive has become the sale of the adulterated article that there is practically no call for pure molasses from grocers, who find larger profits by buying the adulterated article and selling it for the pure. Glucose is said to be the most common adulterant. Besides this admixture there are brands of molasses that are bleached with chemicals injurious to health.

New York Hospital Additions.—New buildings for the New York Hospital were opened last week. By the purchase of land and buildings on the west enlarged ground area was gained for them, and by rearranging the whole north front the possibilities of important additions were secured. The group consists of a private patients' building, a dormitory building for employes, ambulance departments, governors' building, and out-patient department. The largest building is the private patients' building. This is ten stories high, and, as it is equipped with modern elevators, the upper rooms are even more desirable than the lower ones. The first floor is used for executive purposes, the second mainly for the doctors, while the stories above are arranged for private patients, having reception rooms, pantries, bathrooms, and every comfort desirable. Many of these rooms are arranged in suites for those who desire complete accommodation; but there are a large number of single rooms for those who need privacy at a moderate outlay. On the upper floor are two operating-rooms, each with its separate etherizing-room, wash-rooms, sterilizing-rooms, nurses' rooms, etc., and each provided with its own ventilating plant controlled by thermostats in the rooms. At the rear of this building, separated from it and reached by special elevators from the yard, is an isolating department with toilet, baths, pantries, and disinfecting apparatus. It has its own heating and ventilating system, independent of the rest of the building.

Rating of Physician Candidates.—An important change in the manner of rating the standing of physicians who are candidates for positions in State institutions has just been made by the State Civil Service Commission. It has decided to accept in lieu of the examination heretofore required the examinations for license to practise medicine in this State conducted under the authority of the University of the State of New York, and to enter accepted applicants for such positions upon the eligible list in accordance with the ratings obtained by them in the examination for license to practise. In conformity with this determination an eligible list will be prepared on December 15th containing the names of persons whose applications have been accepted prior to that date, and new lists will be made up from time to time in the same manner whenever required. The positions are open to men and women. The salary in most cases is $600 a year and maintenance.

New York Academy of Medicine.—At the meeting of the Academy of Medicine held December 6th the following nominations of officers for the ensuing year were made: For president, Dr. Wm. H. Thomson, Dr. A. A. Smith, and Dr. Robert F. Weir; for vice-president, Dr. Virgil P. Gibney, Dr. Thomas Satterthwaite, and Dr. Chas. L. Dana; for secretary, Dr. Jno. H. Huddleston; for corresponding secretary, Dr. Louis Faugères Bishop; for trustee, Dr. A. A. Smith, and Dr. E. L. Herrick; for committee on admissions, Dr. Francis Torek, and Dr. Van Duzen Young. Polls are open December 20th from 8 to 9 P. M.

Surgical Section Nominations.—Nominations of officers for the Surgical Section of the New York Academy of Medicine were made at the meeting of December 10th, as follows: For chairman, Dr. John B. Walker and Dr. Charles L. Gibson; for secretary, Dr. Edward M. Foote was named. The election will take place at the meeting on the second Tuesday of January.

PHILADELPHIA.

Samuel D. Gross Prize.—The Philadelphia Academy of Surgery announces the Samuel D. Gross prize of one thousand dollars. No essay which the trustees deemed worthy of the prize having been received on January 1, 1900, they hereby announce that the prize will be awarded on October 1, 1901.

The conditions annexed by the testator are that the prize "Shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens." It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery. The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 S. 13th St., Philadelphia," on or before October 1, 1901. Each essay must be distinguished

by a motto and accompanied by a sealed envelope bearing the same motto, and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

W. W. Keen, M.D.,
J. Ewing Mears, M.D.,
J. Chalmers Da Costa, M.D.,
Trustees.

Ambulance Surgeon Injured.—While the ambulance of St. Agnes' Hospital was conveying a patient to the hospital recently the front axle broke. Dr. O'Neill, the ambulance surgeon, jumped, but, becoming entangled in the reins, fell and severely injured one of his ankles.

Hospital Physicians Dine.—The fourteenth annual dinner of the Association of ex-Resident and Resident Physicians of the Philadelphia Hospital was held last week at the Bellevue, more than 50 members being present. The officers are: President, Dr. E. L. Dyer; Vice-Presidents, Drs. H. C. Wood and J. K. Lineaweaver; Secretary, Dr. E. R. Stone.

Faith Curists Sentenced.—Sheets and Sollenberger, proprietors of the "Beulah Orphanage," have been sentenced to three months in prison. The case grew out of the death of a seven-months-old child at the Orphanage last July. Sollenberger stated that he considered medicine a poison to the human system and that he believed in leaving ill persons in the hands of the Supreme Being. In passing sentence the Judge stated that the previous good reputation of the defendants had much to do with determining the length of imprisonment imposed.

Diseased Cattle Sent to New Jersey.—The Board of Health of Trenton has begun suit against the Trenton Abattoir Company to collect penalties for bringing diseased cattle into the State. Nearly a score of cows from Bucks Co., Pa., were condemned as tuberculous and killed. Some of the members of the Pennsylvania State Board of Health who were helping investigate the case state that New Jersey is practically made the dumping-ground for diseased cattle from this section of the State, because of the laxity of her laws.

Obituary.—Dr. Frederick W. Pleibel, one of the oldest practising physicians in the northeastern section of the city, died last week in the German Hospital. Dr. Pleibel was born in Germany. He came to this country in 1846, graduating from the University in the same class as the late Dr. Pepper.

Norristown Insane Asylum.—The Trustees of this institution are divided on the question of retaining Dr. Susan J. Tabor, resident physician of the female department. Charges of destruction of property and of lax discipline have been made and investigated. It is claimed that cliques of nurses existed and that deserving and capable new nurses have been obliged to leave on this account. As eight of the eleven trustees voting favored dismissal, an election has been ordered for January 4th. Members of the Board living in this city believe that such action is unwarranted.

Hygiene in Public Schools.—The Committee on Hygiene of the Board of Education has reported that the trial of screens to remove the dust from air before it is used for ventilating purposes has given very satisfactory results. This will likely lead to their introduction in all schools where blowers are used for ventilation. The inauguration of a system of physical training in the elementary schools is under discussion. The German-American Central Alliance has offered to furnish free of charge an instructor in calisthenics in any school named by the Board.

Suspension of Prolapsed Rectum.—Dr. Charles P. Noble, of the Kensington Hospital for Women, reports two cases of prolapsed rectum in which good results were obtained by suspension. An incision was made in the left inguinal region as for colostomy. The rectum was then brought up and sutured to the abdominal wall, preferably to the rectus muscle. Great relief is afforded by this method. Some constipation persists, this being more marked in one of the cases than in the other. Laxatives should be judiciously used to prevent this. Dr. W. J. Hearn also reports a similar case, operated upon in 1895, the patient being made very comfortable. In his case an assistant held up the bowel during the operation by the hand introduced through the anus.

Report of School Medical Inspectors.—A report covering the time from the inauguration of the system, January 1st to October 31st, has been made. The number of cases reported was 5876, of which 3446 were contagious. More than 1000 cases of defective vision were found. In addition to discovering diseases not before noticed, the report states that medical inspection has caused parents to exercise greater care in keeping at home children who otherwise would have been a menace to the health of their schoolmates. The inspectors have completed their organization with Dr. J. H. McKee as president, and Dr. F. C. Hammond as secretary and treasurer. Stated meetings will be held to discuss matters pertaining to school hygiene.

Mosquitoes and Malarial Parasites.—At the meeting of the College of Physicians, December 5th, Dr. A. E. Woldert read a paper giving the results of experiments in cultivating the malarial parasite in mosquitoes. The larvæ of the Anopheles were secured and the adult mosquitoes allowed to bite persons having malarial fever. In some instances the malarial parasites in their developmental stages were found when the mos-

quitoes were dissected. The Anopheles was found in every malarious district visited, but malaria was not present at every place where this species of mosquito was to be obtained. The Anopheles was found in the healthy Mt. Pocono region, which is 3000 feet above sea level.

Unusually Low Death-Rate.—The number of deaths during the week ending December 8th was 376, a very low mortality for this season of the year. This is in part attributed to the strict enforcement of laws regarding the reporting and isolation of cases of contagious disease, one physician being prosecuted during the past week, for failing to report a case of diphtheria. The corps of medical nuisance inspectors of the Bureau of Health is also to be credited with doing much to suppress disease epidemics. Smallpox has been practically stamped out.

Report of State Board of Health.—The annual report of the State Board of Health which has just been issued states that the most important subject of legislation at the present time is the institution of safeguards for public water supplies. The last Legislature recognized two facts: First, that the State has the right to exercise control over public waters and to forbid their pollution; second, the State Board of Health is the proper body to enforce this authority. This law applies only to cities of the first class and efforts are being made to have it extended. The report calls attention to the necessity for this, inasmuch as typhoid fever is a disease of the small village rather than of the large city. The epidemic at Cementon emphasizes the importance of a sanitary inspection of a water supply before its introduction rather than after its use. Cementon was rejoicing in a pure (?) spring water supply. An inspection showed sources of pollution on a stream supplying the dam from which water was pumped to the reservoir. Typhoid fever has made its appearance in all the families which have used this water. A sanitary survey of all the waters of the State is urged. Norristown is recognized as the principal source of pollution of the Philadelphia water supply, and the courts will be asked to interfere if the nuisance is not abated.

Concerning school directors the report says: "The law authorizing school directors to assume certain functions of a board of health is still on trial. The fact that during the past year only twenty-four school boards have availed themselves of this opportunity to aid in the protection of the public health would seem to indicate that it does not commend itself to the great body of school directors throughout the State. The entire number which have reported to the board as having assumed their new responsibilities is but fifty-six out of a possible two thousand seven hundred."

The total number of cases of smallpox officially reported as having occurred in the State during the epidemic which began in December, 1898, is 1429 with 18 deaths. The report calls attention to the fact that the State Board favors the placing of pulmonary tuberculosis in the class of contagious and notifiable diseases.

CHICAGO.

Epileptic Colony for Illinois.—After the members of the State Board of Charities voted last week to locate the new State epileptic colony, created by an act of the last Legislature, at Notchcliff, near Elsah, in Jersey County, conditional upon the people of that community agreeing to the conditions imposed by the Board in connection with locating the colony.

Bogus Medical Diploma Men Convicted.—A verdict of guilty was rendered in the United States District Court to-day against James and Thomas Armstrong for using the mails to defraud in connection with their diploma mill, the Metropolitan Medical College.

Chicago Sanitary Trustees.—Alexander T. Jones, the newly-installed president of the Board of Trustees of the Sanitary District, has hurled defiance at the local Democratic machine in terms regarded as a declaration of war without quarter. Mr. Jones said in substance that he would not be subservient to the wishes of the Democratic machine, but considered himself answerable solely to the people; and the utterance brought dismay to the hearts of "the gang," for Mr. Jones went further and promulgated plans which will reduce the annual expenditures of the Sanitary District by about $75,000.

Eye Disease in Chicago.—A disease of the eye, which in many respects resembles "pink-eye," is reported epidemic in this city. It is infectious, and is not confined to any particular part of the city or class of people. One explanation offered for the origin of the malady is that it is due to the clouds of dust which have been driven about the streets since the windy season set in.

North Central Illinois Medical Association.—The twenty-seventh annual convention of this body met at La Salle, December 4th and 5th. The program included discussions on various topics of special interest to the professions of medicine and surgery. A reception and banquet were given the delegates at the Harrison House by the doctors, dentists, and pharmacists of La Salle and Peru. Addresses of welcome were delivered by Mayor W. F. McNamara, on behalf of the citizens of La Salle, and by Dr. H. Ziehing on behalf of the local medical fraternity. The principal addresses of the evening were made by Dr. J. B. Murphy of Chicago and Dr. P. M. Burke of La Salle, President of the Association. The following officers were elected for 1901: President, Dr. F. O. Robinson, Wyault; First Vice-President, Dr. John Ross, Pontiac; Second Vice-President, Dr. Jane Reed Keefer, Sterling; Secretary and Treasurer, Dr. George Discus Streator.

Gives Warning of Smallpox.—The weekly bulletin of the Chicago Health Department gives

warning of the danger of smallpox and some figures on the prevalence of the disease. It quotes the federal health reports of November 23d last as showing 297 cases reported this year in Wisconsin, as against none during the same period in 1899. Out of thirty-seven infected States and Territories listed in the same table, in twenty-two a total of 4854 cases is reported this year, as against 1076 cases in the same period—that is June 29th to November 23d—last year. This is an increase of more than 350 per cent. In nine of these States, namely, Iowa, Nebraska, New Hampshire, New Jersey, North Dakota, South Carolina, Utah, Vermont, Wisconsin, no case of the disease was reported during the period of 1899. Illinois has 121 cases reported this year, as against seven last year; of the total 117 are reported from Cairo and four from Chicago. The bulletin continues: "These data indicate an impending epidemic of smallpox, which can be averted only by a general and individual resort to vaccination—the one sure and sufficient safeguard against this pestilence. Since the data of the federal report quoted the spread of the disease has rapidly increased—especially in the Northwest in territory tributary to Chicago. Returns to the Chicago Registrar of Vital Statistics show a total of 1751 deaths for the month of November, 1900.

GENERAL.

Owen's College, Manchester.—The late Dr. D. J. Leech, Professor of Materia Medica and Therapeutics in this institution, leaves £10,000 to endow a chair of materia medica and therapeutics.

A Virus for Rats.—Experiments of the Marine Hospital Service with the Danysz virus No. 2 seem to demonstrate it to be an excellent means for getting rid of rats and mice. Eight days seemed enough. In view of San Francisco's plague cases it is probable that the virus may be largely used.

Diphtheria Cases in School District.—Dr. I. C. Gable, County Medical Examiner of York, Pa., has made a thorough investigation of the diphtheria scare in the Broadbeck school district and reports 100 cases. He attributes the sickness to gross carelessness.

Bequest to Cleveland Hospital.—H. M. Hanna, brother of Senator Hanna, has given the Lakeside Hospital $81,580. He turned over to the trustees 1000 shares of Northern Pacific preferred stock valued at the present time at this sum.

Pan-American Medical Congress.—In view of the unsettled conditions of the yellow-fever situation in Havana it has been decided to postpone the meeting of the Pan-American Medical Congress. February 5, 1901, has been proposed as the most advisable date.

Yellow Fever in Mississippi and Louisiana.—Since the frost no new cases of yellow fever have been reported. From a series of investigations made of the towns about Natchez, Osyka, and Brookhaven, it seems probable that there has been much more yellow fever than has been supposed. Some five cases have been reported forty miles south of Natchez on the river in Louisiana. A large number of peculiar epidemic jaundice cases have been reported from McComb's Dam, Miss. Unless active measures are taken next spring may see a recrudescence of yellow fever.

Another Bubonic-Plague Death in San Francisco.—Another death from bubonic plague is reported from Chinatown. Quarantine against San Francisco will continue to be enforced at El Paso and on the western border of the State for an indefinite period. Louisiana and other Southern States have become alarmed at the prolonged existence of the disease in San Francisco and a general quarantine by all the Southern States may be declared against the infected city.

To Combine Toronto Medical Schools.—Definite steps are being taken to bring about the amalgamation of Trinity Medical College, Toronto, and Toronto Medical College. Representatives of the two faculties have held a meeting in the Premier's office, Toronto, and a committee composed of three members of each faculty was appointed to draft a definite basis of amalgamation.

Surgeons, Dentists and Veterinarians for the Army.—In the new Army Bill discussion amendments were passed bearing on the appointment of fifty volunteer surgeons, ranking as major, and of fifty assistant surgeons with rank of captain; thirty dental surgeons, of whom three should be chief dental surgeons, and a corps of veterinary surgeons.

Crime in the United States.—Criminology and sociology rest so largely on the medical aspects of individual psychology that some recent statistics on murder in the United States gathered by the Chicago *Times-Herald* is of special interest. The average yearly number of murders, computed on the number for the last decennial, in the different States in the Union is as follows: South Carolina, 221; Georgia, 381; Florida, 157; Ohio, 332; Indiana, 228; Illinois, 315; Michigan, 205; Wisconsin, 154; Minnesota, 159; Iowa, 202; Missouri, 362; North Dakota, 29; South Dakota, 45; Nebraska, 168; Kansas, 235; Maine, 18; New Hampshire, 9; Vermont, 6; Massachusetts, 96; Rhode Island, 52; Connecticut, 73; New York, 512; New Jersey, 120; Pennsylvania, 312; Delaware, 48; Maryland, 280; District of Columbia, 24; Virginia, 305; West Virginia, 87; North Carolina, 285; Kentucky, 398; Tennessee, 408; Alabama, 461; Mississippi, 317; Louisiana, 358; Texas, 1021; Arkansas, 305; Montana, 90; Wyoming, 22; Colorado, 252; New Mexico, 58; Arizona, 43; Utah, 57; Nevada, 39; Idaho, 27; Washington, 102; Oregon, 79; California, 422.

Metric System Coming.—The bill of Representative Shafroth of Colorado for the adoption of the metric system by the United States was

favorably reported last week by unanimous vote of the House Committee on Coinage, Weights and Measures. The bill is changed so as to make the system go into effect January 1, 1903.

Typhoid Fever at Galveston.—Galveston is reported to be threatened with an epidemic of typhoid fever. There is a great deal of sickness prevalent in the city and physicians say that the majority of patients have developed typhoid symptoms. A number of cases have occurred among persons living on the water-front. There are twenty-one cases now under treatment in St. Mary's Infirmary, and seven at the Sealey Hospital, and more would be at the hospital if rooms could be obtained. The outbreak and spread of the disease are due to the unsanitary condition of the city, and the impurity of the cistern water, the only means of supply for many families. Many persons are crowded together in buildings and tents that barely protect them from the inclemencies of the weather.

To Prevent Tuberculosis.—The German Department of the Interior has issued a set of instructions conveying compulsory precautions to be taken against the spread of tuberculosis in the empire. The instructions consist of seven articles, providing that doctors, under all circumstances where their patients have lung or larynx tuberculosis, must give written notice to the police as soon as the case in question has been diagnosed; that immediately after the death of a person from this form of the disease the room he used and his effects must be thoroughly disinfected; that professional women who lay out the dead must report at once in writing to the police authorities whether the disease was of the lungs or larynx; and that keepers of hotels, lodging-houses, asylums, or other public institutions, shall report immediately the appearance of the disease in the establishment under their control. Non-compliance with these regulations is subject to a fine of $35.70 or six weeks' imprisonment.

Cocaine Drunkenness.—Chief of Police Caster of New Orleans issued instructions to the police last week to arrest all persons dealing illegally in cocaine or suffering from cocaine drunkenness. The order said: "The constant use of cocaine has assumed large and serious proportions and is daily increasing to such an extent as to be a menace to public health. You are directed to notify the force under your command to use extreme diligence in enforcing the city ordinance against the use of cocaine and to make arrests. This menace is general throughout the city. This order must be strictly adhered to, and you will make written reports to this office of each offender arrested and from whom the drug was purchased, whether from a druggist or pedler." The complaints against the abuse of cocaine have been very loud for some time, thousands of persons, mainly negroes, using the drug and injuring themselves physically and mentally by it. Some drug-stores confine themselves almost wholly to the sale of cocaine, but the bulk of it is sold by pedlers in either pellets or in powder to mix with wine. Under instructions from the Mayor and Council the police will try to break up the abuse and banish cocaine from New Orleans.

Typhoid in the Army.—Surgeon-General Sternberg made public December 7th a report upon the origin and spread of typhoid fever in the United States military camps during the Spanish war of 1898, prepared at his instance by a board consisting of Major Walter Reed, Surgeon, U. S. A.; Major Victor C. Vaughan, Division Surgeon, U. S. V.; and Major Edward O. Shakespeare, Brigadier-Surgeon, U. S. V. The Surgeon-General prefaces the report by calling attention to the vast amount of work the medical corps was called upon to perform during the war, in order to cope with the tremendous increase of the army in the field, and comments upon the widespread prevalence of typhoid in 1898, 20,000 cases of this disease appearing among the troops encamped within the limits of the United States, from May until September of that year. A general summary of the conclusions reached by the Board indicates that during the Spanish war every regiment constituting the first, second, third, fourth, fifth, and seventh army corps developed typhoid fever, this being true of both the volunteer and regular commands. More than 90 per cent. of the volunteer regiments are shown to have developed typhoid within eight weeks after going into camp, and the fever developed also in certain of the regular regiments within three to five weeks after the tents went up. Typhoid became epidemic in all camps, large and small, North and South, and was found to be so widely distributed in this country that one or more cases are likely to appear in any regiment within eight weeks after assembly, whether on the march or stationary. It is also stated that, with typhoid fever as widely disseminated as it is in this country, the chances are that if a regiment of 1300 men should be assembled in any section, and kept in a camp having the most perfect sanitary conditions, one or more cases of the fever would develop. The Board condemns in general the methods of disposing of the excretions of the human body, holding that a lack of proper facilities in this respect was in large measure responsible for the prevalence of the fever in the camps. Infected water was found to be an unimportant factor in the spread of typhoid in the national encampments of 1898. The part played by flies in the dissemination of germs of the disease, however, was plainly evident. Except where urgent emergency makes it necessary, the Board urges that one command should not be located upon a site recently occupied and vacated by another. It is urged that the soldiers' beds should be raised from the ground, for the men are reported to have slept in dust piles possibly infected with typhoid germs; and also that the soldiers be made to remove their outer clothing at night, wherever possible.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, December 1, 1900.

ANNUAL REPORT OF THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS—PROF. CALMETTE ON ANTIPLAGUE SERUMTHERAPY—VITAL STATISTICS OF NEW SOUTH WALES—DECLINE OF THE BIRTH-RATE—THE "RATIONAL DRESS" MOVEMENT—THE MISTAKES OF THE WAR—FAILURE OF THE GOVERNMENT TO PROVIDE A MEANS OF BOILING WATER—SUCCESS OF THE MOSQUITO-PROOF HUT IN THE CAMPAGNA IN PREVENTING MALARIA—PROF. GRASSI'S SCHEME TO RID ITALY OF MALARIA—THE LEGAL PERILS OF MEDICAL PRACTICE—REVERSAL OF AN UNJUST VERDICT.

The annual report of the Council of the Royal College of Surgeons which has just been issued shows that there are 1221 Fellows and 17,510 Members, which is considerably more than half the names on the Medical Register. The experimental and chemical departments of the research laboratories of the Royal Colleges of Physicians and Surgeons have been completely reorganized. By the provision of a considerable quantity of apparatus they are now well equipped for carrying out research work. Here is prepared the serum for the treatment of diphtheria in the Metropolitan Hospitals. The mixed serum now issued averages 300 units per c.c. In the year 10,999 doses, each containing 4000 units, 24,408 doses, each containing 3000 units, and 725 doses, each containing 2000 units, have been supplied. In reference to the Library the supply of new volumes and journals has been fully kept up. The inflow of volumes is now estimated at about 1000 per annum, including journals and transactions, and the total number of volumes is well over 50,000. The library is particularly rich in the transactions of societies and in periodicals relating not only to medicine and surgery, but also to accessory sciences. The large illustrated works of zoology, anatomy, etc., are well represented. There is also a good collection of portraits of eminent members of the profession. The second Harben lecture was delivered at the examination hall of the Royal College of Surgeons and Physicians by Prof. Calmette, Director of the Pasteur Institute of Lille, who discussed antiplague serumtherapy. In all cases, he said, the infection whatever its mode of entry resulted in the multiplication of the plague bacillus first in the lymphatic channels, then in the blood. Even a few hours after infection the bacilli were found in the blood and in immense quantities in all the organs. The serum should provoke their rapid destruction by phagocytosis or bacteriolysis. Hence the slow absorption of serum injected subcutaneously failed to arrest the disease; but when injected into the veins the result was different. Four or five hours afterward the temperature dropped, rising again in eight or twelve hours and then dropping finally. The temporary rise corresponded to the period during which the bacilli were being removed from the circulation by the leucocytes. Antiplague serum contained a reacting substance which enabled the leucocytes and alexins of the blood to dissolve the bacilli. There was no danger attached to intravenous injections if given slowly and with care to avoid the introduction of air or septic particles. The serum was the best known remedy for curing plague. It was equally useful as a preventive, though, unfortunately, its action lasts only eight or ten days and therefore the injections should be repeated every week. At Oporto and Glasgow it had been established that inoculated persons who contracted the disease within the immune period had only slight symptoms and always recovered. The preventive injection, which should be made under the skin of the abdomen in a dose of 10 c.c., occasionally caused eruptions and sometimes joint pains, but these symptoms were transient. Above all the serum had the immense advantage of conferring immunity in a few hours.

The Government of New South Wales' report on the vital statistics for 1899 contains several items of interest. The population at the end of the year was 1,356,650, an increase of 22,810 on the preceding year. The marriage-rate was 6.89 per 1000, the highest since 1891. But the average number of children in a family has dropped from 5.26 to 4.04. The birth-rate was only 27.10, the lowest recorded. An investigation into the cause of this decline showed that (1) the proportion of fertile marriages is declining; (2) that among fertile women the birth-rate is diminishing; (3) that Australian women are less fertile than European immigrants. Illegitimate births have been steadily increasing and now amount to 7.16 per cent. of the total. The death-rate is 11.82, which is 0.61 below the mean rate of the last ten years. The death-rate from phthisis has fallen from 14 per 10,000 in 1899 to 11. Cancer shows an alarming increase; in 1860-64 the rates were 1.84 and 2.17 per 10,000 respectively for males and females: in 1895-99 they were 5.18 and 5.08.

The "rational dress" movement does not make much progress among our female population, but its disciples are enthusiastic and zealous in endeavoring to propagate their views. The "Rational Dress League" has just had a grand field night on the occasion of their annual public meeting. Believing that example is better than precept, the ladies gave a practical demonstration of the superiority of the knickerbocker over the ordinary skirt in active pursuits, whether work or play, especially in riding the diamond-frame bicycle. Attired in costumes of various tints the fair demonstrators afforded a curious study. Some looked charmingly pretty, others unfortunately did not; but all were actuated by a zealous desire to show the aims of the League. Viscountess Harberton addressed the spectators. She

said that the necessity for vigorous propaganda had been rendered greater by the almost universal adoption of the filthy and disgusting trailing skirt with which ladies swept up the dirt of the street, inconsiderately carrying it to the drawing-rooms of their friends. She would rather be hooted by unmannerly boys than run the risk of breaking her neck by riding a bicycle in ordinary costume. A medical man discoursed on the disadvantages of corsets and asserted that there was far too much material about the skirts of some members of the League. He did not advocate tights, but if something could be devised between tights and the superabundant accordion arrangement of present-day skirts it would be hitting a happy mean.

At the inaugural meeting of the Midland Pharmaceutical Society Dr. Green, who had recently returned from the front, gave an interesting address on his experiences and exposed the mistakes of the war from a sanitary standpoint. The greatest lack of the entire campaign was a means of boiling drinking-water—the only certain method of preventing typhoid fever. Filters were provided, but they were insufficient in number and liable to leakage. This was the greatest mistake of the whole campaign. No gun, no luggage, no machinery was too heavy or too cumbersome if required to assail the enemy, but for the defence of the troops against a foe far more deadly than Mauser bullets or shrapnel shells a few necessary boilers were too great impediments to be allowed. No man should have been allowed to drink unboiled water.

The experiment carried out by Drs. Low and Sambon of the London School of Tropical Medicine—living for some months in a mosquito-proof hut in the fever-stricken Roman Campagna—has been completely successful, and they have returned to London in unimpaired health. The spot where the hut was built was carefully selected by Italian experts as the most malarial part of the Campagna. An interesting fact in this connection is that 16 policemen, who visited Ostia at the time of the assassination of King Humbert in order to search for anarchists supposed to be hiding there, were all prostrated with fever, although only in the place for a few hours at night. Neither the English doctors nor their servants showed the slightest symptoms at any time. Professor Grassi now proposes to rid Italy of malaria by making every house in the affected districts mosquito-proof with wire-netting and insisting on all persons retiring inside at sunset and remaining in until sunrise—the hours during which the mosquito bites. Those already ill he will cure with quinine. According to him, one year ought to be sufficient to stamp out the scourge. But as some 2,000,000 ignorant people are concerned he gives himself five years.

The very unjust verdict by which a medical man was mulcted in £100 damages and costs for informing a relieving officer of the unsound condition of a woman's mind has been reversed in a higher court. I have already informed you of the facts. The woman had hallucinations, sent threatening letters to people, and thought herself bewitched. As she was a qualified pharmacist and was seeking a situation as such, the doctor rightly thought her a danger to the public and acted accordingly. Hence the monstrousness of the penalty imposed on him. The jury thought that some of the allegations made by the doctor were untrue and, while accepting the view that her mind was not sound, found that the doctor was actuated by malice. In the higher court the judges did not agree with the jury on any point and found that there was no evidence of malice.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

VAGINAL HYSTERECTOMY—SEQUELAE OF HEPATIC HYDATIDS—THE THIRD CARDIAC SOUND—ANOMALOUS ECTOPIC GESTATION—REPEATED ECTOPIC PREGNANCY—INFLUENCE OF THE EYE ON THE DEVELOPMENT OF THE ORBIT—ETIOLOGY OF LAMELLAR CATARACT—ABDOMINAL RESECTION OF THE SIGMOID AND OF THE UPPER RECTUM—EVACUATION OF HIGH PELVIC ABSCESSES THROUGH THE ILEOCOSTAL SPACE—INCONTINENCE OF URINE IN THE FEMALE—CONTROL OF THE UTERINE ARTERIES IN ABDOMINAL HYSTERECTOMY.

A. H. N. Lewers, at the Royal Medical and Chirurgical Society, November 13, 1900, submitted the after-results of forty consecutive cases of vaginal hysterectomy for cancer. His custom has always been to examine most carefully under anesthesia each woman, in order to determine whether or not the neoplasm had extended beyond the uterus itself, and then to operate only when it is so confined. The point held is that extension by contiguity always means prompt local recurrence and large cancers, though local in the womb, usually have metastases. His patients have been under his care for two to seven years after interference and present the following statistics: Twelve cases have been up to the present without recurrence; eighteen suffered from return of the growth and four died; three had passed out of his knowledge; two remained without settled diagnosis; and one had primary tuberculous ulceration of the cervix uteri. Omitting one case in which about one year had elapsed, the other eleven gave very satisfactory results for periods ranging from two to seven years or over. His conclusions are that vaginal hysterectomy is a most promising operation when done early enough, and that early diagnosis rests upon careful examinations and minute attention to cases giving a history of irregular bleeding at any period of life and particularly about the menopause. If women better understood the possibilities behind this symptom many would seek advice early enough to receive prolonged and in a few instances permanent relief.

N. Dalton, at the Clinical Society of London, November 9th, discussed the following sequelæ of a case of hydatid cysts of the liver. The girl at the age of eleven years was admitted to the Great Ormond Street Hospital in the service of Dr. Barlow for hydatid cysts of the liver. She then passed hydatids *per rectum* and coughed up bile. Complete freedom from symptoms followed until her sixteenth year when she came under the writer's care for ascites at the King's College Hospital. Paracentesis was required every two weeks to relieve the symptoms. Finally an exploratory operation was done in the hope of finding some remnants of the old cyst or other remediable cause of the ascites. Only the adhesions about the site of the old hepatopulmonary fistula were present and the abdomen was therefore closed. During the succeeding two weeks two paracenteses were necessary, but thereafter only the lower hypogastrium contained fluid and the rest of the abdominal cavity appeared to be obliterated by adhesions. For the next five years this continued until a ventral hernia developed in the laparotomy scar and at her twenty-third year caused a fatal septic peritonitis. Post-mortem were found (1) the old cyst cavity opening above by the fistulous remnants into a bronchiectasis and below into a dilatation of the gall-duct; (2) adhesions thickening the mesentery and omentum and obliterating the upper part of the peritoneal cavity; (3) turbid fluid in small quantity in the hypogastrium; (4) pus foci elsewhere in the cavity; (5) thickenings of the capsule of Glisson; (6) cirrhosis extending inward from the capsule. Thus almost complete cure of the ascites appeared ascribable to the numerous adhesions, which mechanically obliterated the cavity and by establishing rich collateral anastomoses between the portal and parietal venous systems relieved the congestion of the liver itself and of its portal blood-supply. The adhesions were probably excited solely by exposing to the air, when the laparotomy was done, the ill-nourished endothelial cells of the peritoneum, precisely as when tuberculous inflammation yields to such access of the air to it. Since the cyst had been virtually cured during the last few years of life the ascites had been due to the cirrhosis which continued as an active process. Probably the ascites of all cirrhoses would cease if good collateral circulation could be excited by adhesions.

T. S. Wilson discussed the diastolic cardiac sound causing spurious reduplication of the second sound at the apex, often called the third sound of the heart. In his opinion the underlying causes appeared to be as follows: (1) This third sound of the heart is not produced by the inrush of blood into the ventricle, although in some cases of mitral stenosis the flow causes a murmur, which is, however, synchronous with the diastole; (2) during the expansion movements, probably, the valve segments are kept tense by the muscular action, but at the moment of relaxation are free to move. If, therefore, a powerful enough stream of blood were still flowing through the valve at this moment of relaxation it would vibrate the valve curtains and cause an audible sound; (3) if this view be correct, the third sound means that the auricle is unable to empty itself as fully or as quickly as normal; (4) such delay in the flow will occur (*a*) when the mitral valve is stenosed and (*b*) when the ventricle cannot in expanding draw off the entire auricular contents; (5) therefore we would look for the third sound (*a*) in mitral stenosis, (*b*) in dilatation of the auricle, and (*c*) when the ventricle is too feeble to empty the lesser chamber. Cardiographs were shown and notes of an autopsy tending to support these views. In life the girl had shown pericarditis, a loud third sound and mitral regurgitant murmur. Instead of a short rise in the cardiographic tracing just at the end of the diastolic decline and during ventricular relaxation, there was a high, pointed rise almost as high as the ventricular rise itself. Apparent all over the heart, it seemed to show that during the relaxation period the ventricle filled up and then partially emptied itself. Ulcerative endocarditis caused death. The mitral valve was found *post-mortem* not stenosed, but certainly incompetent. The ventricular capacity was normal at ninety, while the auricle had one hundred and sixty-four cubic centimeters. Pericarditic adhesions had probably kept the ventricle from dilating and the flow of the large quantity of blood from the auricle had caused the temporary rise in the curve.

E. O. Croft, at the Obstetrical Society of London, November 7th, detailed a case of anomalous ectopic pregnancy. By abdominal section the sac and its contents were removed which by rupture caused violent hemorrhage, yielding to ligation of the broad ligament. Death by exhaustion followed. At the necropsy no peritonitis was present and the organs were removed for examination. Before rupture the sac had contained the whole fetus about four months old, membranes, placenta and amniotic fluid, but no blood, fluid or clotted. Its relations were those of an ovarian tumor with a short pedicle, with follicles over its surface resembling the Graafian follicles, but no structure corresponding to the ovary could be found. The tube was normal. The uterus and its appendage of the opposite side were normal. No ovarian tissue was certainly diagnosed in the tumor walls, but the case appeared to be an ovarian ectopic pregnancy.

A. H. Lewers reported a twenty-nine-year-old patient who had never been normally pregnant, but twice had had tubal gestation. In March, 1894, the left appendage was removed, and the tube found to contain a two-month-old fetus at the point of threatened abortion. The ostium of the tube was patent, but not dilated. In May, 1900, she had a complete tubal abortion on the right side, and that tube and ovary were taken out. Complete recovery followed. The ostium of the second tube was widely dilated. Reference was made to J. H. Ferguson's recent paper on this subject in which it is stated that

consecutive ectopic pregnancy is not rare in literature, but only fourteen repeated laparotomies for it are reported. The interval between the first and second impregnations varies from six weeks to five years. Hence this case of the author seems unusually long, over six years. Bland Sutton said that the diagnosis of ovarian ectopic pregnancy rests on two factors, pressure of undoubted ovarian tissue and of positive fetal substance therein. In the absence of demonstrated ovarian stroma and cells, he is inclined to be very skeptical of any so-called ovarian ectopic pregnancy.

W. E. Thompson, at the Ophthalmological Society of the United Kingdom, November 8th, read a paper on the disputed question as to whether the eye influences the growth of the orbit. Rabbits were anesthetized and one eye enucleated and later after the animals were full-grown they were killed. Measurements showed that there was a great difference between the two orbits; in all dimensions the normal exceeded the anophthalmic side by fifteen per cent. in the fresh and ten per cent. in the macerated skull. The application of the paper is at once important, because artificial eyes should be promptly inserted.

N. G. Bennett read a few notes on the cause of lamellar cataract, claiming that there is a relation between dentition and nutrition and this disease. Reference was made to the paper of Bernard Duband and Treacher Collins stating the measurements of lenses during life and after removal. Accepting these ophthalmoscopic and direct observations as authoritative, it became apparent that the lens is attacked by the disease either at or just before birth, or if the onset is later the part of the organ diseased seems to correspond with the periphery of the lens at or before birth. He then described minutely the teeth of twenty-two cases of lamellar cataract he had collected, in two classes on the basis of the degree the enamel had been affected. In each class, taken in conjunction with the dates of calcification as fixed by Röse, the disease appeared to have begun after birth, the period in one class being variable and in the second class about two years later. The exact cause of these conditions has long been a matter of dispute. Referring to a large number of examples of hypoplastic teeth he pointed out that in cases free from lamellar cataract the disease had very evidently begun at much later and irregular periods. When the history is definite it seemed that most of such cases had suffered from exanthemata, whereas the others had had irregular sicknesses like convulsions, malnutrition, etc. Sometimes the teeth would have two or more horizontal depressions, corresponding with the same number of attacks. The inference is that lamellar cataract is a disease of infancy, probably due to malnutrition. The developmental similarity between the teeth and the lens may be significant.

R. Morison, at the British Gynecological Society, November 8th, described several new operations for gynecological conditions. (1) Abdominal resection of the sigmoid or upper portion of the rectum, applicable to left suppurative salpingitis affecting the rectum and to cancer of the sigmoid mistaken for disease of the ovary. Its steps are as follows: (*a*) The diseased bowel is resected; (*b*) into the proximal stump is tied a glass bobbin carrying distally a rubber tube, which is passed through the distal stump of the bowel and out of the anus; (*c*) traction then telescopes the upper into the lower piece of bowel; (*d*) the distal stump is next tied very tightly to the bobbin just to the anal side of the cut edge of the sigmoid; (*e*) resumed traction now produces a moderate intussusception which is secured by Lembert sutures. In seven to nine days the sloughing bowel and bobbin come away. He has done the operation fourteen times, twice for complicated salpingitis and twelve times for malignant disease. The mortality was 50 per cent., which may be decreased by avoiding doing the operation with a loaded colon. A primary colostomy will avoid this blunder. His second operation is for certain forms of parametric abscess. Such processes may be in the floor of the broad ligament and pointing into the vagina, or in the course of the broad ligament between the two leaves of peritoneum and pointing often above Poupart's ligament, or in the pelvic and iliac glands out of reach from the vagina. He had seen two fatalities follow evacuation of the pus by abdominal section. He has successfully performed the following operation twenty times: Corresponding with the middle third of a line from the middle of the iliocostal space behind to the symphysis in front a three- or four-inch opening into the abdomen is made. Through this the diagnosis is confirmed by palpating the uterus and its adnexa and locating the boundaries of the abscess. The incision is next extended backward to correspond with the prominence of the focus. With the left hand within the abdomen as a guide, the right hand bluntly opens the abscess, free drainage and suitable suture complete the process. His next point was the simplicity and value of first clamping and cutting, then tying the uterine vessels in abdominal hysterectomy. For a patulous and incontinent female urethra he had satisfactorily followed this method: Half-way between the umbilicus and the symphysis a one-inch incision down to the peritoneum is made. The patient is then put into the lithotomy position and an incision encircling the urethra made, joined by one in the long axis of the vagina extended beyond the neck of the bladder. The flaps were dissected off and the urethra and neck of the bladder were freed absolutely and on all sides. Next between the abdominal parieties and the serosa an artery forceps was forced gently down into the vagina. Here it seized the urethra and drew it up into the abdominal wound, where it was secured by sutures. The bladder was drained by a catheter left *in situ* for eight days. The dressings during this time had kept dry and when the catheter was withdrawn it was supposed the bladder might be continent sufficiently to per-

mit a regular use of the catheter. But the organ will hold one and a half pints against cough and ordinary exertion, but can be emptied at will.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting, Held November 8, 1900.

Thomas H. Southworth, M.D., Chairman.

Pyelonephritis.—Dr. Louis Fischer presented a patient who had suffered for years from a purulent condition of the right kidney and who had recovered after nephrectomy. The child, now a girl of twelve, had been healthy from birth until the age of four and had acquired her teeth and learned to walk and talk at the usual time. When four years old she suffered from varicella and then from measles. During the convalescence from the measles it was noted that the urine was frequently cloudy. Ever since that time the child has suffered from recurring attacks of fever often ushered in by chills. This fever did not seem to be intermittent, but was irregularly continuous and the child's general condition was very poor. She was treated for malaria, because of the recurring chills and fever, but without effect. When she came under Dr. Fischer's care a large tumor could be felt in the right ileocecal region, extending from the margin of the liver well down on the crest of ilium. This tumor was hard; evidence of fluctuation could not be obtained. The urine contained albumin and casts, some red blood-cells, but never any pus cells. It seemed probable that the tumor had some connection with the right kidney, but the possibility of its being ovarian in origin was to be borne in mind. The patient presented the usual symptoms of pyelonephritis. There was considerable gastric disturbance, marked anorexia and obstinate constipation.

Operation.—At the operation, which was done through the abdomen instead of through the loin because of the doubt as to the origin of the tumor, the pelvis of the right kidney was found to be a huge pus sac. Tubercle bacilli were not found, nor could any other microbe be demonstrated. Concretions had formed along the abscess-wall. These seemed to be due to secondary calcification of broken-down material within the pus sac. The condition was evidently simple pyelitis. The kidney itself was affected by an interstitial nephritis. The post-operative improvement has been very marked. The other kidney had compensatory hypertrophy and the patient is now passing two pints of normal urine a day. A very interesting symptom that has developed since the operation is the occurrence of ribbon-like stools due to narrowing of the lumen of the gut by inflammatory adhesions. This does not, however, interfere with the girl's general health, nor does it give rise to serious constipation. The condition is not growing worse. The adhesions show no signs of continued contractility and so further narrowing of the lumen of the colon seems improbable.

Surgery of Pyelonephritis.—Dr. S. Marx who operated gave his reasons for choosing the transperitoneal route as follows: (1) Because the tumor was so large that he doubted whether the ordinary lumbar incision would suffice for the delivery and complete removal of the tumor, even if it should prove to be, as was suspected, of kidney origin. (2) There was some doubt as to the diagnosis of the kind of tumor that was present. The possibility of its being an ovarian tumor, either cystic in nature or one of the teratomata, could not be excluded. (3) Physical examination showed that the tumor was attached to the liver and if the adhesions were to be broken up without subjecting the patient to unnecessary risk, the abdominal route would give much more opportunity to work by direct vision. The mortality for the removal of purulent kidneys by the abdominal route in children is more than 50 per cent.

Frequency of Pyelitis.—Dr. Jacobi in discussion said that pyelitis is not so uncommon in children as is usually believed. Some years ago Dr. L. Emmett Holt reported a series of cases and pointed out that their occurrence was more frequent than was generally believed. All kidney diseases in children are more frequent than are imagined. The interesting question in this case is, What was the original cause of the pyelitis? Very frequently pus in the pelvis of the kidney develops as a consequence of the presence of a renal calculus. Certain concretions were found in this case, but they were not considered to be primary calculi. If on being examined, however, they proved to have a uric-acid nucleus it would then seem clear that the calculus was the primary condition in the case. Infants very frequently pass an excess of uric acid during the first two or three weeks of life and the characteristic uric-acid stain on the napkin is usually easy to find. The uric-acid infarcts found in the kidneys of children who die very young point to the excess of this substance. These infarcts emphasize the necessity for giving the child an abundance of liquid during the first days of life so as to aid in flushing out the kidneys.

In closing the discussion Dr. Fischer said that pyelonephritis in children sometimes seems to originate from vulvovaginitis. The micro-organism which causes the external inflammation succeeds in working through the bladder to the ureter and thence to the kidneys. Dr. Baginsky claims that pyelonephritis in children is practically always due to the bacterium coli commune, which probably finds it way into the kidney through the intestinal walls.

Enlarged Thymus.—Dr. Henry Heiman presented a patient with an enlarged thymus. The

child is but three months old and has been in good health ever since birth, which was instrumental in character. Its cry is the noticeable feature of the case. When the child becomes irritable there is a peculiar persistent whine during which cyanosis develops. Physical examination is negative, except for an increased area of dulness over the thymus region, especially over the right lobe of the organ. After this discovery it was found that the lymphatic glands of the neck were somewhat enlarged. This probably represents one of the cases that will prove in after life, if the child should live, to be unsuitable for anesthesia; as the status lymphaticus of such patients usually brings with it a tendency to adenoid overgrowth in the pharynx, this fact must be borne in mind. Two cases of sudden death at Mt. Sinai Hospital within the last few months have proved to be associated with enlarged thymus. In at least one of them hypertrophied lymphoid tissue was found in the intestinal tract.

Dr. Jacobi said that an enlarged thymus cannot always be demonstrated by percussion. In one instance where he was called to see a child that had died suddenly a short time before percussion failed to reveal the presence of enlarged thymus and yet the autopsy proved that it was present. It is important in percussing for enlarged thymus to turn the child over on its face, and have it held up in the arms of the nurse so that percussion can be practised at the favorable moment when gravity brings the enlarged thymus forward against the chest-wall. In cases of enlarged thymus a systolic murmur can often be heard in the median line at the second rib. Growing inspiration is not an unusual symptom in cases of enlarged thymus, but, of course, it may occur in other conditions, as in craniotabes.

Dr. Kerley said that the sudden death which occurs because of enlarged thymus frequently comes on without any preliminary symptoms. The child suffers from a single convulsion and then dies. The most faithful investigation of the child's history will frequently fail to reveal the slightest symptom that may point to the existence of an enlarged thymus before the moment of the fatal issue. One child seen by him was seized with a convulsion while nursing and promptly died. The thymus was found at the autopsy to be four or five times the normal size, yet it had not occasioned a single symptom that would have previously called attention to its presence.

Dr. Libman said that he has recently seen four cases of sudden death in which an enlarged thymus was found at autopsy. One of them died in a dispensary and proved on section to have the status lymphaticus. A second was taken with an attack of laryngismus stridulus, threw its head back and promptly died. An enlarged thymus was found, but the status lymphaticus was absent. Two other patients suffered from enlarged thymus after extensive burns. In each of the cases the children passed from quiet sleep to death without a struggle. The nurse had seen each of the patients within a quarter of an hour before death and they seemed perfectly well. They were found dead, neither outcry nor change of position having been noted. In each patient edema of the thymus gland was found to exist.

Unusual Infantile Scurvy.—Dr. Francis J. Murray read this paper which will appear in a subsequent issue of the Medical News.

Diet and Scurvy.—Dr. Kerley reported histories of twenty-four cases of scurvy that have occurred in his experience. In twelve of these cases the children were being fed on good artificial food formulæ and the diet was above suspicion. In two cases that occurred recently one patient was being fed on raw, the other on Pasteurized milk. The affection is not due to the special character of the food given, but to its malassimilation. The proper food elements for nutrition are not absorbed from the digestive tract in the amounts necessary for healthy metabolism.

Dr. Walter Lester Carr said that the most interesting thing about Dr. Murray's case is the fact that the mere addition of fruit-juice without any special change of diet led to prompt recovery. This question of the necessity for a change of diet, as well as the addition of fruit-juice, is as yet in dispute. Clinical experience seems to indicate that the addition of fruit-juice without any other change of diet suffices to relieve the symptoms.

Acute Rheumatism in Children.—Dr. Henry Heiman said that there has been a good deal of discussion in recent years as to the cause of rheumatism. So many theories of causation have been suggested that there exists more confusion than ever as to the actual etiology of the disease. Some years ago Prout suggested that it was due to an excess of lactic acid in the body. This was a gratuitous theory, however. There is no sure test for the quantitative presence of lactic acid in the blood. More than this, physiology has not yet made certain what is the normal formula of lactic acid in the tissues. Haig suggested uric acid as the cause of rheumatism. Other observers have not been able to confirm Haig's observations as to the presence of an excess of uric acid in the blood of rheumatic patients. Heiman in a series of cases carefully investigated for the purpose never found an excess of uric acid in the urine of those suffering from rheumatic arthritis. The question of the nervous origin of rheumatism put forward by certain American neurologists is no longer considered tenable. The occurrence of rheumatism with special frequency during damp weather led to the formulation of the theory that the disease was miasmatic in origin and that it was due to some organic poison that occurred in the atmosphere during damp weather.

Rheumatism as an Infection.— There are many qualities of rheumatism which point to its infectious nature. Its clinical course, its prodromal

symptoms followed by a rise of temperature, sometimes accompanied by a chill and certain tendencies to self-limitation, class it with the infectious fevers. The pathological changes found in the organs of patients who die during an acute attack of the disease also indicate its infectious character. A certain amount of cloudy swelling has been noticed and an enlarged spleen, hemorrhages into various organs, etc. The changes in the blood are those which occur during infectious fevers as the result of the presence of the toxins of bacteria on the circulation. Singer of Vienna found in a series of cases of rheumatism that a number of micro-organisms were present in the joints and on the heart valves of rheumatic patients. Their morphology was that of the pyogenic microbes. His conclusion was that rheumatism was really a modified pyemia due to the invasion of the system by an attenuated pus micro-organism.

Rheumatism in Children.—In children during an attack of rheumatism there is a lessened liability to joint complications. Frequently the disease causes only pain and as a result rheumatism in children often masquerades under the disguise of harmless growing-pains. At its worst the disease is seldom so severe as in adults and there is less tendency to the development of pyrexia. There is, however, a considerably greater tendency to the occurrence of metastases of the rheumatic virus to various parts of the body. Erythemata, rheumatic purpura, tendinous nodules of inflammation, pericarditis and endocarditis are much more frequent than in the adult. The commonest complication is endocarditis, which children very seldom escape unless the greatest care is exercised in the treatment of attacks of rheumatism. During the course of rheumatism, peptonuria is frequently found. It is caused by the destruction of leucocytes within the system and the elimination of their products through the urine.

Pseudorheumatism.—A number of affections that have been looked upon as rheumatoid in character and have even been given the name of rheumatism should with our modern knowledge of the disease be entirely excluded from the category of rheumatic affections. Formerly one spoke of gonorrheal rheumatism and of the rheumatism which complicates scarlet fever, typhoid fever, erysipelas and other diseases. Now it is known that the arthritis which occurs during the course of these diseases is really due to the specific microbe of primary affection. Our present knowledge of the microbiology of rheumatism shows that, in addition to whatever microbe may play a rôle in the etiology of the disease, the predisposition of the individual is an important adjuvant. Soil, climate and heredity serve to create the predisposition which leads to rheumatic infection.

Occurrence of Rheumatism.—Rheumatism occurs very rarely in patients under three years of age. Some cases have been reported by Jacobi, Chapin, Holt, Henoch and others, in children younger than this. It must be remembered that most cases of so-called rheumatism which develop under one year of age are really scurvy. A few cases of genuine rheumatism have, however, been reported even in nurslings and in some cases it has been noted by competent careful observers that a mother suffering from an attack of acute rheumatic arthritis has given birth to a child with unmistakable symptoms of the same disease.

Treatment.—In children, as in adults, the best remedy for rheumatism is some form of the salicylates. Usually salol or salipyrin will be found effective. Although the salicylates are a specific for rheumatism they fail to cure in certain instances. Other remedies will then have to be employed.

Prophylaxis.—It has been found that quinine given in comparatively small doses will prevent relapses of malaria. It has therefore been suggested that relapses of rheumatism might be forestalled in the same way. Dr. Heiman has tried this method during the past year in a certain number of cases with excellent satisfaction. There is no mention in medical literature of prophylactic treatment for rheumatism, except a recent suggestion of Ewart's, who proposes to use the salicylates somewhat in the same way. Prophylactic treatment consists in the administration of three to five grains of some salicylate for one week of each month for a number of months after the occurrence of an attack. Undoubtedly, as is the case with malaria, the microbes that cause rheumatism lurk somewhere in the system. The salicylates act as antiseptics in the circulation; they kill the bacteria, neutralize toxins, and thus protect the heart. It is well known how liable children are to recurrences of rheumatism and it is also well known how much each recurrence lessens the chance of escape from serious heart complications. This prophylactic treatment therefore should prove a great boon.

Rheumatism and Trauma.—Dr. Jacobi said that while rheumatism is almost certainly microbic in origin, there is no doubt that certain conditions especially predispose to its occurrence. It is worthy of note that there is much more rheumatism of the joints of the lower extremity than of the upper extremity. This seems to be due to the fact that the more frequent occurrence of trauma in the legs provides a lowered resistance where the microbes of rheumatism find a ready lodging. Seventy-five per cent. of the cases of acute rheumatic arthritis occur in the lower extremity. It is important, therefore, to prevent trauma in children who are especially predisposed by heredity or a previous attack to the occurrence of inflammatory rheumatism. Charcot first called attention to this fact and it is a matter of common clinical experience that after fractures and wounds about the fingers, as the result of impediments to the circulation, micro-organisms so often present in the circulation find a

ready lodgment. The same conditions hold for tuberculous osteitis and arthritis. It is not an easy matter to prevent trauma in a healthy boy, but even slight injuries must be taken care of and as far as possible avoided.

The Pharynx and Nose in Rheumatism.—Long before there was question of microbes in rheumatism and their possible entrance through the tonsils, the connection between tonsilitis and rheumatism had been observed by clinicians. Great care should be taken of the throats of children who are liable to rheumatism. Adenoids should be cared for and if any nasal discharge exists it should be treated. Large tonsils should be removed and nasal irrigations should be employed more often than at present. Under the influence of proper nasal irrigation small adenoid growths in the pharynx disappear. For nasal irrigation no syringe or fountain irrigation apparatus should be employed, but simply a cup containing the irrigating solution. The maintenance of a good cutaneous circulation will stimulate the system and relieve a laboring heart. Patients liable to relapses of rheumatism, as those suffering from chronic tuberculosis, whether they be children or adults, should be advised to take a cold sponge bath every morning and then a good rubbing afterward.

Salicylates Not Specifics.—Dr. James J. Walsh said that it must be borne in mind that the idea, originally so prevalent of the salicylates as specific remedies for rheumatism, had been abandoned by most foreign therapeutists. At the Charité Hospital in Berlin, where the salicylates were first introduced, they are no longer employed in the treatment of rheumatism in two out of the three clinics. The salicylates do not influence the course of the rheumatism. They relieve pain, lower the temperature and make the patient comfortable. Prof. Pribram, in his monograph on rheumatism, collects the statistics of parallel series of hundreds of cases treated by the salicylates and by other remedies. Patients treated by the salicylates were not on the average able to leave the hospital any sooner than those treated by other remedies. The salicylates are depressant drugs. To use them for the purpose of prophylaxis against rheumatism would seem to be a mistake. As to the specific microbic cause of rheumatism it is probable that while rheumatism is surely an acute infectious disease it is not due to any form of organism which is at present known. Singer's work, which would seem to make rheumatism a modified pyemia due to attenuated pyogenic germs, has been completely discredited not only by the Vienna school, but by the labors of many other investigators. Widal declared at the last Paris Congress that rheumatism was surely an infection. Fluid taken from the joints of rheumatic cases shows the presence of many polynuclear leucocytes. These cells are an index of Nature's reaction against some infective material. Widal has tried to obtain cultures from the joint fluids of fifteen cases of rheumatism, but without success. The arthritic fluid was put in contact with every medium known to modern bacteriology, yet failed to produce a growth.

Rheumatism a Household Disease.—Dr. Oppenheim said that rheumatism is distinctly a household disease. It is rare to have a single individual suffer from it where many people are living together. In about 70 per cent. of the cases there is an hereditary element in the etiology of rheumatism. Cheadle says that if rheumatism occurs on both sides of the house in the ancestors there is marked tendency to serious, recurring rheumatic storms during life. At the first manifestation of a predisposition to rheumatism the general health should be cared for. It will be found that it is at times when the general health is at a low ebb that rheumatic attacks occur.

Dr. Kerley said that he hesitates about giving the salicylates for prophylactic purposes, because of their tendency to depress. To two patients in whom a marked tendency to the recurrence of rheumatism existed he gave strychnine and iron for alternate weeks with salicylates, but was not satisfied with their action. One of his patients fell ill of rheumatism with severe endocarditis during the course of the week in which he was taking salicylates. He believes that the method suggested by Professor Jacobi of stimulating the system and improving the circulation by douches of cold water, followed by rubbing down, is much more likely to do good.

Dr. Heiman in closing the discussion said that Prudden has shown that the salicylates when taken into the system produce a very definite effect upon the cell protoplasm and prevent the migration of leucocytes. Clinical experience seems to show that it will be of use in preventing rheumatic relapse. Care, of course, must be exercised in giving the drugs, especially where any kidney affection exists. Failure to eliminate the salicylates and their retention in the system lead to their being split up with the production of carbolic acid.

BOOK REVIEWS.

Forty Years in the Medical Profession, 1858-1898. By John Janvier Black, M.D., Member of the College of Physicians, Philadelphia. J. B. Lippincott, Philadelphia.

This rather unique book, neither wholly medical nor wholly literary, appeals to us from a very human standpoint. It is the mantle of experience which a wise and observing man is letting slip from his shoulders. The book as its title proclaims, records the personal relations of a busy physician to the discoveries and signs of the times.

Dr. Black had evidently in his youth the picture memory that retained sharply-defined images, and it is with almost photographic clearness that he reproduces the scenes of his student days, the

clinics of Pancoast, Gross and Agnew in Philadelphia, with the strong personality of the men. He has also that seeing eye which is the heritage of experience, and has traced through the rise and progress of bacteriology, antisepsis, serumtherapy, and the multiple new theories of medicine, the true thread of progress. In short, throughout the series of half-essay-like, half-reminiscencing chapters on the medical life of the last half century, he presents in a naive, friendly, quite conversational tone the actual practical benefit that he has derived as a country practitioner, from this progress of medicine. And we cannot help feeling that many a man strained to distraction with new theories, new medicines, and new methods, might find a certain calm and rest in reading this readable book, and discovering among conflicting theories what a common-sense practising physician had tried and had not found wanting.

A Manual of Materia Medica and Pharmacology. By David M. R. Culbreth, Ph. G., M.D., Professor of Botany, Materia Medica and Pharmacognosy in the Maryland College of Pharmacy; Associate Professor of Materia Medica and Pharmacognosy in the University of Maryland Medical and Dental Schools. Second Edition. Lea Brothers & Co., Philadelphia and New York.

In the rapidly enlarging scope of the teaching of students of pharmacy and of medicine a number of reliable text-books of the kind under consideration have been published. Culbreth's book represents one of the best of its kind. For the student of pharmacy it is an invaluable guide and no pharmacist should be permitted to practise his profession unless he possessed a thorough acquaintance of the facts which are here gathered. He cannot afford to know less. For the student of medicine, however, the work is not essential, yet it might well serve as a foundation on which to build a structure of future studies. As anatomy is the necessary groundwork for efficient progress in physiology, surgery and a knowledge of abnormal states, so the materials which are utilized in the treatment of a disease should be thoroughly known in their various relationships, botanical or chemical, in order that comprehensive work can be done in the subsequent study of the action of drugs and the application of such activities in the modification of abnormal and aberrant physiological states. From this point of view such a work would be most eminently useful in the first or second year curriculum of a progressive medical school. The revision has been thorough and the information on plant constituents is, for the most part, of recent acquisition and an immense amount of new matter has been added, particularly in the field of the inorganic drugs. This is an especially desirable feature since heretofore it has been in this department that contemporaneous materia medica literature has been weakest.

Manuel Complet de Gynecologie Médicale et Chirurgicale. Par A. Lutaud. Professeur libre de Gynecologie, Medecin adjoint de Saint-Lazare, Membre fondateur de la Société Obstetricale et Gynecologique de Paris, etc. Nouvelle edition entièrement refondue contenant la technique opératoire complete, et 607 figures dans le texte. Paris: A. Maloine, Editeur, 1900.

The new edition of Lutaud's well-known work retains not only its reputation among French gynecological treatises, but compares well with the many text-books in our own and the German language. The subdivision of the matter is eminently practical; the anatomy, embryology and pathology of each part of the female sexual tract being considered in a separate chapter. The language throughout is clear and to the point and the descriptions, especially of the operative procedures, are concise and free from ballast. Of operations, only those which have universally found favor are considered in detail and the frequency with which American names are encountered is gratifying. The great stress laid upon asepsis, upon radiography and upon ureteral catheterization, speaks for the modern character of the book. The illustrations hardly come up to those of many of our own works, but those illustrating plastic operations on cervix and vagina are exceptionally good. The pathology, as in so many treatises on this branch of surgery, is deficient. The chapter on Ectopic Gestation is practical and well written. Several pages are devoted to the subject of Artificial Fecundation. On the whole, the book can be most warmly recommended to American students and physicians, the more so since the clearness of the style will not demand a very extensive knowledge of French.

A Manual of Otology. By Gorham Bacon, A.M., M.D., Professor of Otology in Cornell University Medical College, New York. Introduction by Clarence J. Blake, M.D., Professor of Otology in Harvard Medical School, Boston. Second Edition. Lea Brothers & Co., Philadelphia and New York.

The second edition of this manual, following so closely on the issue of the first and showing so many points of improvement in what was already a very acceptable and useful volume, has in it all the characteristics of a popular work to be read by the general practitioner when larger works would be neglected, much as Nettleship's "Diseases of the Eye" has displaced the larger books on the same subject. This volume, like the other popular book cited, is handy in size, excellent in type, attractive in presentation and form. The two new plates add a great deal to the value of the book, especially the first, showing the section of the temporal. The coloring of the drum-membranes in the second plate is far from being first-class, yet the plate illustrates.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

A RAPID AND SIMPLE OPERATION FOR GALL-STONES FOUND BY EXPLORING THE ABDOMEN IN THE COURSE OF A LOWER ABDOMINAL OPERATION.

By HOWARD A. KELLY, M.D.,
OF BALTIMORE, MD.

I HAVE dwelt elsewhere (see MEDICAL NEWS, Dec. 16, 1899) upon the importance of utilizing an abdominal incision which is over 8 centimeters in length, for the purpose of investigating the condition of all the important viscera which are accessible to touch, provided the condition of the patient is satisfactory and there is no technical objection to the slight delay involved. I desire now to speak of a simple and satisfactory method of removing stones when found in the gall-bladder in this way.

When the incision is made in the lower part of the abdomen either in the median line, or as I have made it in one instance, over the site of the vermiform appendix, the hand is introduced into the abdomen hugging the abdominal wall, conducted up over the omentum and the colon as far as the liver where the gall-bladder is easily discovered in its notch on the right, as a somewhat tense or flaccid sac filling the fissure and projecting out a little beyond the hepatic border. It is my practice to squeeze the gall-bladder and note the rapid collapse showing that the cystic duct is pervious. If there is a stone present it is easily felt through the thin walls by palpating from the cystic duct up toward the fundus. In order to remove a stone, if the gall-bladder is much distended, it should first be emptied by compression between the thumb and two fingers; this allows the stone to be grasped or rather hooked up by the first and second fingers to the top of the gall-bladder, where the stone is then lifted firmly up against the abdominal wall which is thrust forward until a distinct eminence appears on the skin surface just below the margin of the ribs. Care must be taken not to allow any loop of intestine or the margin of the liver to intervene between the bladder and the abdominal wall.

An incision about 4 or 5 centimeters in length is now made with the free right hand, down through the abdominal parietes over the eminence directly upon the stone, cutting straight through layer by layer in a vertical direction. The pressure from within keeps the tissues anemic as skin, fat and muscle are successively divided. The white peritoneum is easily recognized, and on reaching this layer a little nick is made and the two edges caught with mosquito forceps; as the peritoneal incision is made a little larger, the gall-bladder with the stone appears in the incision, is opened and its edges caught as the incision is made large enough to evacuate its contents; the stone may then clear the opening suddenly and land on the floor some distance from the table. The edges of the gall-bladder, held up by four of Halsted's delicate mosquito forceps, are now united by a fine silk suture beginning at one end of the incision and continued to the other, embracing all the coats but the mucosa. The same suture is then continued back to the starting-point as a quilted suture, burying the first layer, when the ends are tied together. If the gall-bladder is normal I do not hesitate to drop it without a drain. If the walls are diseased I drop the gall-bladder after closing with interrupted sutures and insert a small drain provisionally. The abdominal wound is then closed and the operation completed within a few minutes of its commencement. There is no danger of contamination of the peritoneum with bile as the gall-bladder is drawn well up into the parietal incision and the peritoneal opening thereby closed.

One of the first cases in which I resorted to this mode of discovering and removing a gall-stone was under the following unusual circumstances: The patient was a man, about forty years of age, in the care of Dr. Yost of Glen Rock, Pa., to whom I am indebted for the opportunity of seeing and treating him. He had always been healthy until he was stricken with typhoid fever November 1, 1898. Previously both his wife and daughter had been severely ill with the same disease and he had nursed them himself and remained in almost constant attendance. In its onset and its course his attack was a typical one. For the first ten days the temperature in the morning was 101° F.; in the evening 102.5° F.; for the succeeding ten days the morning temperature was 102.5° F., the evening temperature 104° to 104.5° F.; after this there was a gradual defervescence for three weeks followed by a slight recrudescence for a week, when the evening temperature reached 103.5° F. He was free from fever at about the thirteenth week. The bowel symptoms were never severe, there were no bloody discharges and no tendency to constipation, but there was some abdominal pain and slight distention. There was never any jaundice during the entire course of the attack. During the latter part of February, 1899, he had a slight attack of colic about the umbilical and the right iliac regions with some tenderness, lasting three or four days. After this the convalescence progressed in a perfectly normal manner with a fair appetite, digestion and nutrition.

*Address delivered before the Southern Surgical and Gynecological Association, Atlanta, Ga., Nov. 15, 1900.

At three o'clock in the afternoon of March 20, 1889, he complained suddenly of a severe colicky pain in the umbilical and right iliac regions, which increased steadily in spite of warm application, hypodermic injections of morphine and enemata of hot water; the pain was associated with some retching, slight vomiting and a desire to defecate frequently without result, he passing neither fecal matter nor any of the water of which one gallon was injected. Dr. Yost then fearing perforation of the bowel telegraphed for the writer, who operated with the aid of Dr. Thos. R. Brown, at 9 P. M., March 21, 1899.

The appendix seemed to be the likeliest seat of the trouble, so the incision was made over the right iliac fossa; when the abdomen was opened it was found filled with thin, watery, somewhat sticky fluid of a dark color but with no odor. There were no evidences of suppuration, but the intestines, uniformly injected and lack-luster, showed a general peritonitis. The appendix was normal, save the general injection covering its surface. Inasmuch as the color of the fluid in the abdominal cavity suggested bile, the incision was enlarged, the right hand and forearm introduced and the liver palpated. No rent could be detected in the collapsed gall-bladder, but a single large stone was distinctly felt.

Proceeding then on the assumption that the gall-bladder was ruptured, the stone was caught between two fingers and pressed up against the abdominal wall by means of the hand inside the abdomen. Then with the other hand the overlying tissues were cut through until the gall-bladder was exposed, excised and its edges caught with artery forceps on either side, when suddenly a large, clear, shining biliary calculus popped out and fell on the floor, rolling toward a crowd of some seventeen spectators, friends of the family crowded into the little attic room to witness the operation.

The point of rupture could not be found, therefore the incision in the gall-bladder was sutured to the abdominal opening and the bladder drained with several pieces of narrow iodoform gauze. The lower incision was also drained, after thoroughly washing out the abdominal cavity, with washed-out iodoform gauze.

The convalescence was uneventful, the temperature never rose above 100° F., although the pulse continued high for several days after the operation. The stools were somewhat constipated, of a grey color and clay-like consistency for about five weeks, when they gradually assumed a normal color as the cystic fistula closed and the bile resumed its natural channel. The discharge of bile through the fistula was very free for eighteen days and then ceased quite abruptly. The drains were removed gradually, the last piece being taken out on the thirty-third day. The urine was dark colored for about four weeks when it gradually assumed a normal color. The patient had never previously passed any biliary calculi to his own knowledge.

The gall-stone was about 1.5 x 1 x 1 cm., purely translucent and entirely without any traces of pigment; the analysis showed that it consisted of pure cholesterin.

Fig. 1.

The left hand, covered with a glove, is introduced through the incision above the symphysis; the gall-bladder is found and the stone pushed up into the fundus and against the abdominal wall where it makes a decided prominence. The free hand is next engaged in liberating the stone by cutting directly down through the tissues of the wall until the bladder is opened and the stone escapes.

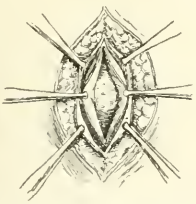
Cultures, made subsequently from the abdominal cavity and from the bile as it issued from the fistula and from the center of the stone in the hope that typhoid bacilli might be found, proved negative. A chemical examination of the fluid obtained from the abdominal cavity showed that it contained the biliary pigments and the glycocholate and taurocholate of soda. It was therefore certain that there was a rupture of the gall-bladder and that the severe abdominal symptoms had been produced by the peritonitis set up by the irritating biliary salts.

The patient came to my office ten months later, with his incisions perfectly healed and in excellent health.

In addition to the case just related, I have operated upon seven others, all women.

Case II. was a difficult hysteromyomectomy, performed April 1, 1899, on a married woman thirty-nine years of age. After checking all the hemorrhage in the pelvis, the right arm was introduced and the other abdominal viscera palpated. A large irregular stone was found in the gall-bladder; this was caught by two fingers and pushed up into the fundus against the abdominal

Fig. 2.



The incision in the abdominal wall, showing the deep fascia held up by four, and the incised gall-bladder held open by two pairs of mosquito forceps. The stone is seen in the middle ready for delivery.

wall. With a scalpel in the left hand the tissues were then divided in a vertical direction until the gall-bladder was exposed, when it was incised and its edges secured with forceps; the incision was then enlarged and the stone, which was black and about 4 x 3 cm. in diameter, was pushed out. The gall-bladder was drawn out of the wound to one side and surrounded by gauze until the opening was closed by mattress catgut sutures, the abdominal wound was then closed over the gall-bladder, after which the abdomen below was also closed without drainage. I saw this patient twenty months after the operation in greatly improved health without any complaints referable to the operation.

Case III. was a woman, thirty-two years of age, operated upon April 22, 1899, for a myomatous uterus from which two tumors were removed together with one left broad ligament myoma. The uterine incisions were all closed with catgut, after which the remaining abdominal organs were examined through the incision. The gall-bladder was found to contain two stones which were removed as in Cases I. and II. The incision in the gall-bladder was closed with interrupted catgut sutures, after which both abdominal incisions were closed without drainage. The recovery of the patient was uneventful.

Case IV., a patient of Dr. August Horn of Baltimore, was a married woman, sixty years of age, with a large multilocular cyst of the right ovary. After removing the cyst, in palpating the other organs the gall-bladder was found to contain stones. The abdomen was lax and the gall-bladder was drawn down near the upper end of the wound which extended almost to the umbilicus; after surrounding it with gauze it was cut open and the stones removed. The opening was then closed with two rows of mattress sutures of fine silk, easily applied in the thickened walls of the bladder. The abdomen was washed out and the wound closed without drainage. The stones were all dark in color, the largest one being 3 cm. in diameter.

The convalescence was uneventful and without pain; the highest temperature was 100.5° F. on the second day.

Case V. was a patient of Dr. Fry of Washington, operated upon May 23, 1900; the patient, forty-eight years of age, had a large ovarian cyst; after removal of the tumor, in palpating the other abdominal organs the gall-bladder was found choked with a mass of large stones; it was pushed up against the abdominal wall and opened by a longitudinal incision and 20 stones removed varying in diameter from 3½ to 1 cm. The gall-bladder was then sutured by interrupted fine silk sutures, and dropped back into the abdomen with a small iodoform-gauze drain. The abdominal wound from below was closed completely. There was no leakage at all from the gall-bladder, and upon removal of the drain upon the seventh day the opening closed without suppuration.

Case VI. was a woman, fifty-three years of age, a patient of Dr. J. A. Evans of Baltimore; was operated upon October 18, 1900, for a large myomatous uterus filling the lower abdomen. The uterus was removed by hysteromyomectomy from left to right; in order to get it out, it was necessary to make a long incision up to the umbilicus. After completing the pelvic operation and examining the other abdominal viscera, the gall-bladder was found shriveled, white and much thickened, and containing stones. The gall-bladder was drawn toward the upper end of the incision, its fundus incised and two large black stones removed. The walls of the gall-bladder were about ½ cm. in thickness and moderately vascular; the incision was closed by interrupted fine silk sutures. The median abdominal incision was closed up to the upper angle where a fine gauze drain was laid down to the gall-bladder. The patient made an excellent recovery, but with the discharge of a moderate amount of sticky fluid, evidently coming from the gall-bladder, which continued for several weeks.

Case VII. was a patient operated upon November 17, 1900, for a large myomatous uterine

body filling the lower abdomen; it was necessary in order to get it out to make an incision extending from the symphysis up to the umbilicus. After taking out the tumor and palpating the other abdominal viscera a stone was found in the gall-bladder. This was then removed by drawing down the liver and pulling up the long incision to the right side. After packing off the gall-bladder with gauze the incision was made and the stone extracted; the wound was then closed with silk sutures. No drain was used.

Case VIII. was a woman, forty-four years of age, upon whom I performed hysterectomy for a large fibroid uterus filling the lower half of the abdomen; it was necessary, in order to remove the mass, to extend the incision from the symphysis pubis up through the umbilicus and 8 centimeters beyond it. After completing the pelvic operation and examining the rest of the abdominal viscera, a long vermiform appendix was found buried in adhesions and concealed behind the colon, the right kidney was movable, and the transparent gall-bladder was seen full of stones from 1½ cm. in diameter and smaller. Dr. G. B. Miller, who completed the operation, opened the gall-bladder and removed 32 stones, closing it by two layers of fine silk sutures.

Dr. Peters finds, upon going over my anesthesia slips, that I have dictated notes as to the condition of the gall-bladder in 49 cases and stones have been found and removed in 8 per cent. of these.

I offer no apology for removing these foreign bodies by an operation so simple and so safe when the abdomen is once opened for some other more serious cause.

I need but to refer to the distressing sequelæ of a cholecystitis, or a cholangitis, once the stones give rise to an infection and afford by attrition of the mucosa the portal of entry in the surrounding tissues, or, on the other hand, to the miseries of a patient whose stone has begun to wander down toward the duodenum. A still more cogent reason is perhaps found in the frequency with which stones are associated with cancer of the gall-bladder.

In connection with my recommendation to remove gall-stones whenever they are discovered in this way the question of their relative frequency becomes a matter of considerable importance.

Naunyn (*Klinik der Cholelithiasis,* Leipzig, 1892) quotes the frequency of gall-stones from the pathological records of the following clinics:

Peters (Kiel)	5	per cent.
Rother (Munich)	6	" "
Fiedler (Dresden)	7	" "
Schloth (Erlangen)	7.2	" "
Roth (Basel) I.	9	" "
Roth (Basel) II.	10.9	" "
Frank (Vienna)	10	" "
Schroeder (Strassburg)	12	" "

Schroeder's material covering all ages shows that there is a remarkable increase in the percentage according to age.

Table I.

No.	Initials.	Physician.	Date of Oper.	Primary Operation.	Stones.	Gall-Bladder Operation.
1	S.	Dr. G. P. Yost.	Mch. 21, 1899.	Lateral incision over vermiform appendix.	One pure cholesterin.	Incision below the ribs. Gall-bladder sutured to abd. opening, drain. Recovery.
2	M. G.	Dr. E. S. Fruitt.	Apl. 1, 1899.	Median Incision. Hysteromyomectomy.	One large, rough, black stone.	Incision below the ribs. Gall-bladder drawn out of wound and surrounded by gauze. Closed by mattress catgut sutures. No drain. Recovery.
3	E. S.	Dr. D. B. Sprecher.	Apl. 22, 1899.	Median Incision. Myomatous uterus.	Two stones; one the size of a horse-chestnut.	Incision below the ribs. Gall-bladder closed with interrupted catgut sutures. Recovery.
4	B. B.	Dr. A. Horn.	Apl. 9, 1900.	Median Incision. Multilocular cyst of right ovary. Wound extended almost to umbilicus.	One large stone 3 cm. in diam. and several smaller ones. Dark in color.	Gall-bladder drawn down near upper end of median incision, isolated with gauze, opened. Closed with two rows of mattress silk sutures. No drain. Recovery.
5	L. H.	Dr. Henry D. Fry.	May 23, 1900.	Median Incision. Large ovarian cyst.	Twenty stones, 3½-1 cm. in diam.	Gall-bladder exposed by an infracostal longitudinal incision. Closed by interrupted silk sutures. Small iodoform gauze drain. No discharge. Recovery.
6	J. T.	Dr. J. A. Evans.	Oct. 18, 1900.	Median Incision. Large myomatous uterus. Hysteromyomectomy.	Two large black stones.	Gall-bladder drawn down into median incision and stones removed. Closed by interrupted silk sutures. Fine gauze drain to gall-bladder. Recovery, with discharge of some sticky fluid for several weeks.
7	M. S.	.....	Nov. 17, 1900.	Median Incision. Large myomatous uterus. Hysteromyomectomy.	One clear cholesterin stone.	Gall-bladder packed off with gauze and incised through large median abdominal incision. Gall-bladder completely closed with silk sutures.
8	R. C.	.....	Nov. 24, 1900.	Median Incision Large fibroid uterus. Hysterectomy.	Thirty-two small stones, 1½ cm. in diam. and smaller.	Gall-bladder drawn down into median opening and incised Closed by two layers of fine silk sutures. First, mattress; second, continuous.

Age.	Sections.	Cases with gall-stone.	Percentage of gall-stone cases.
0–20	82	2	2.4
21–30	188	6	3.2
31–40	209	24	11.5
41–50	252	28	11.1
51–60	161	16	9.9
60 and over.	258	25	25.2

Of these it is remarkable that 4.4 per cent. were in men and 20.6 per cent. in women, and it is stated that stones were found much more frequently in women who had borne children.

I am not aware that statistics of any considerable number of cases have ever been presented from this country. With the permission of my colleague, Professor Wm. H. Welch, I asked Dr. Clelia D. Mosher, assisting me in my private gynecological work, to review a thousand autopsies made in the Pathological Department of the Johns Hopkins Hospital to investigate this point. The results of Dr. Mosher's excellent labors demonstrated that biliary calculi were found in 59 cases or 5.9 per cent.; in 31 or 4.8 per cent. of the males and in 28 or 7.8 per cent. of the females.

SOME NOTES ON THE TREATMENT OF RHEUMATISM.[1]

By ALFRED STENGEL, M.D.,
OF PHILADELPHIA;
PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF PENNSYLVANIA.

It is not my purpose to discuss elaborately either the nature of rheumatism or its treatment, but, in offering some suggestions based upon my own experience in the treatment of the disease, it is necessary to consider briefly the nature or pathology of the malady.

Acute articular rheumatism is in all probability an infectious disease, although the infective agent has not been positively determined. The older theories regarding the nature of rheumatism have proved inadequate in the light of modern research. It does not any longer suffice to say a disease is dependent upon a dyscrasic state; we recognize that the term dyscrasia is but a cloak of ignorance. If it be intended to imply a constitutional, inherited or acquired weakness of some sort that renders one person more liable to a disease than another, it may be true that rheumatism is favored by such a condition, but in this sense pneumonia is equally dependent upon a dyscrasia. If, again, dyscrasia comprehends a disorder of the blood or of the juices of the body, it remains to prove the existence of such a disorder and its chemical or vital character as contrasted with the existence in the circulating liquids of infective micro-organisms. The various hypotheses regarding the rôle of acids of one kind or another have been disposed of by chemical studies, although much remains to be learned of the metabolism of the disease. The nervous theory of rheumatism needs little or no discussion. Nervous disorders undoubtedly attend and follow the disease, but the causal relationship has been especially traced by those who have confounded rheumatoid arthritis and articular rheumatism.

The infective theory rests upon the peculiar symptoms, course and complications, and the discovery in the lesions of the latter of various micro-organisms. It has been further suggested by the association of rheumatism with certain local infective processes such as tonsillitis and suppurative foci of various localities. The specific organism has not, however, been isolated, or at least the claims to specific relationship have not been established for any one of the several bacteria that have been obtained from the local lesions, the blood, and the urine of cases of rheumatism. The majority of the bacteriologic studies agree in having discovered some form of micrococci, mostly staphylococci; and the same organisms are generally found upon the diseased valves in cases of rheumatic endocarditis. A peculiar bacillus has been isolated in some cases, and has been regarded as specific by some investigators.

It is the opinion of many that rheumatism is a form of infection closely allied to pyemia, but differing in the localization of the lesions and the virulence of the infection from other cases of pyemia. The suggestive resemblance of pyemic arthritis is of importance in this connection. Ordinarily, the latter variety of joint disease differs in clinical and pathologic characters from that which we call articular rheumatism; but a close analysis of series of cases leaves no doubt that there is a gradual merging of one group into the other so that it is impossible to establish a line of separation. The less virulent, polyarticular and cryptogenetic forms of arthritis are called rheumatism; the severe, often monarticular, and manifestly secondary, cases are put down as pyemic. In the same connection it must be confessed that no very definite distinctions can be traced between rheumatism and the rheumatoid conditions associated with such infections as scarlatina, gonorrhea, dysentery, etc. There is doubtless a difference in the etiologic cause in these different forms of disease, and there is correspondingly a difference in their nature, but the difficulty of differentiation must be recognized to appreciate that articular rheumatism as we now understand it is a clinical condition rather than an established pathologic entity. Just as in the case of pneumonia forms caused by different micro-organisms have a very close resemblance in their manifestations, so in rheumatism it is likely that a variety of micro-organisms of moderate virulence may operate to produce a similar pathologic result. The result in question is a serous or serofibrinous inflammation of the joints, the pleura, the endocardium, pericardium, etc., with as a rule moderate systemic infection or intoxication.

In considering the question of treatment it is important to recognize several fundamental facts. First, the tendency in many cases of rheumatism is toward spontaneous recovery. This may occur in a few days and after very mild symptoms, but sometimes only after a prolonged course. These facts should have been more thoroughly appreciated by those who advocated suggestion and other hypnotic measures of treatment. Second, complications, such as pleurisy, endocarditis, pericarditis, etc., are frequent and are more likely to occur in protracted cases than in those of short duration. Third, the complica-

[1] Read by title at the meeting of the Medical Society of Pennsylvania, September 19, 1900.

tions are probably as a rule secondary to the joint disease and not to the infective lesion (such as tonsillitis) that was the primary focus; consequently the severity of the local joint lesions bears a relation to the likelihood of the development of complications. I state these views as probable not as absolutely proved.

Of the drugs that have been used in the treatment of rheumatism, the derivatives of salicylic acid deservedly occupy the first place in professional estimation. Salicylic acid is not, as far as we know, a specific. In many cases it fails entirely; in a greater number it is beneficial in relieving pain and other symptoms, but fails to give complete relief; in some cases its action is so immediate and final that the term specific seems almost justified. How much this difference in action of the drug depends upon etiologic differences in particular cases is unknown. The possibility of such an explanation of the failure or success of the treatment cannot, however, be denied. I am reminded of an experience in a case of rheumatic pleurisy in which the fluid in the chest disappeared with remarkable rapidity after the administration of salicylate of soda, and of other less striking but suggestive results under similar circumstances. The efficiency of the drug in rheumatic pleural effusions has been too frequently observed to permit the belief that the results have been mere coincidents; and the rapidity and thoroughness of action indicate a relationship of the drug to the disease or some cases of the disease that warrants a place near to the remedies we term specifics. One is reminded of the action of potassium iodide in actinomycosis or of arsenic in leukemia and pernicious anemia.

If, however, the salicylic-acid preparations are not specific they at least relieve pain and suffering in a majority of cases, and thereby benefit the patient's general condition. This is doubtless advantageous to the end of helping the combat on the side of the systemic resistance to the infection. Of the preparations of salicylic acid I shall say little, but wish to refer especially to the external applications of one form, the salicylate of methyl or oil of wintergreen. The sodium salt is probably most frequently employed for internal use, and, excepting in rare instances when some other form is more acceptable to the stomach, proves satisfactory if the internal administration of salicylates is likely to be beneficial in any form. The Germans advise large doses, and, though these may cause toxic symptoms, I have found them more satisfactory than small doses spread over a longer time. If salicylic acid is likely to prove useful it will do so in a comparatively short time. The administration of a dose of ten grains of the sodium salt three times daily does not suffice. When this plan has been used the drug has relieved pain scarcely at all and has had no appreciable effect on the course of the disease. From 100 to 150 grains should be given in twenty-four hours for two or three days if symptoms of salicylism have not appeared; after that period the dose may be reduced one-half and after one week's treatment the drug may often be discontinued. Persistent use of the remedy undoubtedly causes depression and other complications. The same general principles apply to the internal use of oil of gaultheria, salicin, ammonium and strontium salicylate, etc.

The simultaneous or separate use of salicylate of methyl, applied to the skin in the form of a ten-per-cent. or twenty-per-cent. ointment and covered with lint and oiled silk, is extremely satisfactory. I have repeatedly tested the pain-allaying power of such local treatment comparing it with simultaneous applications of lead-water and laudanum, Fuller's lotion and the like. Invariably the ointment has given the greater relief and the systemic action of the drug was undoubtedly exercised, as abundance of salicyluric acid in the urine indicated the absorption of the drug.

The relief of pain secured by the internal and external use of salicylates is beneficial in several ways, the chief of which is that such freedom from pain causes rest of the diseased parts by relaxing muscular spasm and at the same time improves the general condition of the patient. Some rest may, however, be obtained in another and better way, *viz.*, by the use of splints or plaster casts. For several years past I have treated cases of acute rheumatism in this way. My first experiences were with cases of gonorrheal rheumatism, but more recently I have practised plaster-fixation in cases of ordinary polyarticular rheumatism. The plaster cast almost invariably relieves pain by reducing the muscular spasm and securing immobility and its application is generally followed by rapid subsidence of the local signs of inflammation. The process of applying the cast has never been so painful to the patient that it had to be abandoned. There has never been any increase of swelling after the cast was applied and it has not, therefore, been necessary in any case to remove the cast on account of pressure. On the contrary, it has often happened that a new cast was needed in two or three days on account of the reduction in the size of the joint. In very acute inflammatory cases I have in the beginning covered the joint with lint on which salicylate of methyl ointment was spread and have then fixed the part with a light cast, removing this in twenty-four or forty-eight hours. The ointment may cause irritation if it is allowed to remain too long in close apposition with the skin. In a few instances of rather subacute character it has proved useful to cut the cast so that daily dressings might be applied to the joint. In none of my cases has it been necessary to continue fixation so long that there has been any danger of ankylosis. As soon as the inflammation has measureably subsided it is advisable to discontinue the cast and in but few instances has the condition relapsed so as to require reapplication of the plaster dress-

ing. Occasionally I have allowed the cast to remain for considerable periods, removing it from time to time to examine the joint or practise gentle manipulations.

My experience with this treatment has been confined to gonorrheal rheumatism and polyarticular rheumatism. In the former affection it has long been used by the profession and little need be said at this time. In one very marked case which I saw in consultation with Dr. L. M. Allen, a cast was applied by the attending physician when I had so little hope of its usefulness that I had advised other treatment. The beneficial effects of the fixation were immediate and marked and the patient recovered completely in a surprisingly short time. When I saw him the disorganization of the joint and the involvement of surrounding tissues appeared so great that it seemed wiser to trust to local counterirritation and general internal treatment. The fortunate result, however, disproved this opinion. In other cases of gonorrheal rheumatism equally satisfactory results have been reached, though less promptly.

In polyarticular rheumatism the fixation method has been most useful when the knee, elbow, and ankles have been the affected joints. The wrists and smaller joints can be managed with splints and in other ways quite as satisfactorily and with less trouble. In one case of a relapsing character, both before and after fixation, the cast had little apparent effect in the direction of reducing the duration of the disease, though it undoubtedly relieved pain. In all of the others the duration of the disease was seemingly reduced.

It is well recognized that some cases of polyarticular rheumatism prove stubborn and do not yield to treatment with salicylic acid combined with rest. In the same cases the general condition of the patient is often unsatisfactory and it is advised to discontinue salicylates and to resort to general tonics. This advice is undoubtedly based upon sound principles, inasmuch as the cure of the disease depends upon the general vitality rather than upon the use of any special remedy. In a number of cases of this sort I have employed bichloride of mercury in small doses with good effect, and have been led to attribute the result to a tonic influence of the drug, as I have in cases of secondary anemia of various sorts found this remedy undoubtedly efficacious when administered continuously for long periods of time in doses of from grain 1/96 to grain 1/72. The remedy seems to be of value as a tonic or stimulant of hemogenesis and not as an antiseptic. As far as its application in rheumatism is concerned, I have found it useful only in subacute cases with little local inflammation and with general systemic depression. Other tonics may be valuable, but none of them has seemed to be of especial use in my experience. Sometimes the general condition of the patient has been favorably influenced by the administration of iron, strychnine, and cod-liver oil, but none of these has seemed to exercise the beneficial effect that has followed the use of bichloride of mercury. The iodides are of undoubted value in the more chronic cases; but I have little experience, and none favorable, of their use in subacute cases.

I do not mention the older alkaline treatment, because I have not found it of value.

Finally, I wish to refer to serum treatment. A number of investigations of the value of serum from convalescents have been published, but thus far no useful results have been obtained. It has occurred to me that an antistaphylococcus serum might be useful if staphylococci play the part in etiology that many believe. A difficulty in the way of following out this thought is the unreliability of the preparations that have thus far been made. My own attempts at obtaining an antistaphylococcus serum have been futile, and I therefore made a few trials of antistreptococcus serum, in the hope that its general antibacterial properties (as contrasted with the specific antistreptococcic action) might prove useful in rheumatism. The three cases in which I employed this preparation were instances of obstinate rheumatism that had not yielded to other treatment. In each of them improvement soon followed the injections. The dose of serum injected was one-third of the customary dose used in streptococcus infection, and the remedy was administered every other day for a period of a week or more, when ordinary treatment was resumed. It would be rash to draw conclusions from so limited an experience, but as far as my trials went there was every encouragement to continue the treatment in suitable cases.

REPORT OF TWO CASES OF SPORADIC OR FAMILY TRICHINOSIS; WITH REMARKS ON THE IMPORTANCE OF EOSINOPHILIA IN THE PERIPHERAL CIRCULATION AS AN AID TO DIAGNOSIS.[1]

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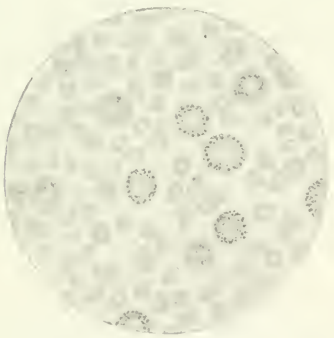
Although trichinæ have often been observed since their recognition by Sir James Paget and Owen in 1835 in the muscles, either in their encysted or larval state, they were considered as pathological curiosities to be found at the autopsy-table only. It remained for Prof. Zenker, the eminent pathologist of Erlangen, then of Dresden, to associate for the first time the clinical symptoms of a grave and fatal case with the presence in the muscles and alimentary canal of numerous living trichinæ.

His case, in abstract, was as follows: A girl, aged twenty years, was admitted to the General Hospital of Dresden on January 12, 1860. She had been ill since Christmas and at the beginning of the New Year had to go to bed. She com-

[1] Read at the annual meeting of the New York State Medical Association, 1900.

plained of lassitude, insomnia, anorexia, constipation, thirst and fever. The fever at the onset was quite high, the abdomen was considerably distended and tender. The spleen was not palpable and rose-spots were absent. The diagnosis of typhoid fever, however, was made. Very soon there occurred much pain in the muscles, especially those of the extremities, which continued day and night. The arms and legs were flexed and could not be extended without the production of great pain. Edema of the legs was present. The patient developed shortly after a pneumonia of a typhoid type, from which she succumbed on January 27th. The postmortem being held the next day, Prof. Zenker was greatly surprised to find, in the first sections of muscles examined microscopically, numerous non-encapsulated trichinæ in and between the muscle fibers. A more thorough search showed the muscles to be literally swarming with trichinæ. Peyer's patches were found normal. Prof. Zenker also found living adult

Fig. 1.



Eosinophilia in Trichinosis.

trichinæ in the intestines, and was able to find trichinæ in the flesh of the animal, some of which had been eaten by this unfortunate girl. As numerous individuals had partaken of the flesh of this same carcass several cases of trichinosis were treated by him. This important contribution to medicine of the discovery of a severe and fatal case of trichinosis was heralded throughout the world and soon much confirmatory evidence was forthcoming of its great value. Since then over a hundred epidemics of trichinosis have been recorded from North Germany alone, with similar records from this and other countries.

The fact that sporadic cases of trichinosis are commonly overlooked is well illustrated by the remarks of Prof. Osler in his article on the clinical features of this disease, in which he says: "Until quite recently I have had no clinical experience with this disease, having seen to recognize but one case in Traube's clinic in Berlin in 1873. The probability is, of course, that in a hospital service of more than twenty years I have frequently overlooked cases just as might have been done in three or four of the cases here reported." These remarks of Prof. Osler may, I believe, with propriety, be applied to most of us. We doubtless have seen, in times past, cases of sporadic or family trichinosis which we have diagnosed and treated as cases of rheumatism, *la grippe* or typhoid fever; trichinosis bearing more than a superficial resemblance to all these diseases.

Owing to the careful observations of Dr. Thomas R. Brown, of Johns Hopkins Hospital, who declares that in trichinosis there is an enormous increase of the eosinophiles in the blood, we now possess a very simple means of diagnosis which will enable us in most if not all instances to recognize this hitherto obscure disease. Dr. Brown's first contribution on this subject was published in the *Bulletin of the Johns Hopkins Hospital*, April, 1897, entitled "Studies in Trichinosis." Here he reports his observation of the condition of the blood in his first case of trichinosis. He found a gradual rise in the proportion of eosinophiles, reaching 68.2 per cent., 35 per cent. higher than any previous record, and from this point a gradual decline to 16.8 per cent. on the patient's discharge. There was a coincident depression of the polymorphonuclear neutrophiles, reaching one time 6.6 per cent., while for two weeks these forms showed an absolute decrease in the blood, notwithstanding the marked leucocytosis reaching on some occasions about 30,000 per cubic millimeter. Dr. Brown's second contribution to this subject appeared in the *Journal for Experimental Medicine*, Vol. III., No. 3, 1898, entitled "Studies in Trichinosis with Especial Reference to the Increase of Eosinophiles in the Blood and Muscles, the Origin of These Cells and Their Diagnostic Importance." Here he reports, in full, his first case together with two new ones, and from the study of the blood draws the following conclusions: (1) That there is a marked increase in the percentage of eosinophilic cells in the blood in trichinosis. (2) That this increase may be used as a diagnostic sign in this disease. (3) That this disease in its sporadic form is more common than has hitherto been supposed, as shown by the discovery of the three cases above described within a comparatively short time at the Johns Hopkins Hospital. (4) That a systematic examination of the blood should be undertaken in cases with indefinite intestinal, muscular, or articular symptoms, in hope that in some, at least, of the hitherto doubtful cases a diagnosis may be reached.

The discovery by Dr. Brown of the presence in trichinosis of an eosinophilia of a higher grade than any other known condition is one of the most valuable contributions to medical science, being second only in importance to that of Zenker. The observations of Brown have been recently verified by Cabot, Gwyn, Atkinson, Stump, Blumer and Newman. In Cabot's case a differential count of the leucocytes showed 27

per cent. of eosinophiles. In the case of Gwyn the percentage of eosinophiles was between 33 per cent. and 66 per cent. In Atkinson's case it reached 8 per cent. and in the case of Stump 52 per cent. of eosinophiles were found. In each of the nine cases reported by Drs. Blumer and Newman, the highest percentage of eosinophiles was, respectively, 40.6 per cent., 41.5 per cent., 36 per cent., 33 per cent., 33.6 per cent., 46 per cent., 39.4 per cent., 50.4 per cent. and 20 per cent.

The histories of my own cases are as follows:

Case I.—Sidney V., thirteen years of age, entered the Sanitarium Hospital November 8, 1899. His family and personal history is of no especial interest in relation to his present condition. This began about November 1, 1899, when he noticed that his face was swollen and that he had pains in his eyeballs. He became breathless on exertion and his feet felt heavy and swollen. He was feverish and chilly and had lost all desire for food. Could elicit no history of any gastro-intestinal disturbance. He stated he had eaten, during the past six months, quantities of "blutwurst" and that his father and brother had also eaten the same and that they had suffered with pains and soreness of muscles of arms and legs.

Present condition.—Patient's height, five feet; weight, 100 pounds. He appears very anemic. The face, especially about upper and lower eyelids and over malar prominences, distinctly swollen. Tongue heavily coated, mucous surfaces pale, no stiffness or tenderness of tongue. Larynx not at all tender on manipulation. Slight tenderness of bodies of biceps and calf muscles. Muscular movements were not attended by soreness. Nerve-trunks not tender. No tenderness of bones or joints. Slight puffiness over tibia. Heart's apex in normal position, sounds normal, no adventitious sounds. Lungs negative. Liver dulness normal. Spleen not enlarged. Abdomen not tympanitic or tender. No rose-spots. On part of the nervous system nothing was found abnormal save slight diminution of the patellar tendon reflexes. Pulse regular, full rate 110. Temperature 102° F. Urine (twenty-four-hour specimen) light amber; sp. gr. 1008; alkaline in reaction; 480 grs. of urea per twenty-four hours; no albumin, sugar, casts, blood or pus. Diazo-reaction distinct.

Before entering the hospital the patient had been treated at another institution where the diagnosis of heart-disease with dropsy was made. My attention was directed to the patient through the courtesy of my colleague, Dr. James P. Marsh, in whose service he was, and who had made no diagnosis, but recognized the fact that he had never before seen a similar case. The peculiar location of the swelling about the face and especially the eyelids; the slight muscle tenderness; the entire absence of signs of disease in any of the organs, together with the history of having eaten, over a long period, "blutwurst," consisting as it does of coagulated blood with small chunks of pork, brought to mind at once the fact that we probably had to deal with a case of sporadic or family trichinosis. I suggested an immediate microscopic examination of the blood, which was carried out by Dr. E. W. Becker, the house physician. He found an enormous increase of eosinophiles, these being easily recognized at a glance beneath the microscope, in freshly-drawn blood. A careful differential count was then made of 1000 leucocytes after having been stained with Ehrlich's triacid mixture with the following result: Eosinophiles, 773; small lymphocytes, 124; large lymphocytes and transitionals, 49; polymorphonuclear leucocytes, 54; hemoglobin, 65 per cent. This was truly an enormous increase of the eosinophiles, there being 77 per cent. together with a remarkable decrease of the polymorphonuclear leucocytes. For the purpose of confirming the diagnosis, Dr. E. D. Ferguson removed some muscular tissue from the biceps of the left arm and right gastrocnemius muscles. The tissue was examined in the fresh state, after having been teased, without finding trichinæ. Their workings were evident, however, as several granular areas were seen together with longitudinal and transverse splitting of the muscle fibers. The remainder of the muscle tissue was sectioned after hardening in absolute alcohol and imbedded in celloidin. It was stained with hematoxylin and eosin. In several sections non-encapsulated trichinæ were found lying coiled up in characteristic granular areas of myositis. Many muscle fibers were found split both transversely and longitudinally. The connective tissue between the primitive muscle bundles was slightly increased. All these changes were marked only in close proximity to the position of the areas of granular degeneration. Differential blood-count November 28, 1899: Eosinophiles, 52.6 per cent.; polynuclear leucocytes, 36.6 per cent.; large mononuclear leucocytes, 1.9 per cent.; small mononuclear leucocytes, 7.7 per cent.

Case II.—W. W., forty-two years old, the father of the former case, came into the Sanitarium Hospital November 14, 1900. He was a painter by occupation. Never had been ill since childhood save eight years ago when he had an attack of painter's colic. Since early spring in common with his son, he has been eating large quantities of "blutwurst." Three months ago he was taken ill with chills, fever, cramps in stomach, severe headache and pains and aches all over the body. He consulted a physician who told him that he had malarial fever and treated him for several days. In a short time diarrhea supervened and has continued ever since. The pains and soreness in the muscles of the arms and legs have remained until the present time, although much less in intensity than at first. He complains of the muscles being tender, especially those of arms and the hamstrings of legs. These muscles frequently cramp, after which the arms and legs feel numb. The patient was a moder-

ately well-nourished man, 5 feet 6 inches in height and weighed 150 pounds, and walked unassisted to the hospital. His face was slightly swollen about the malar eminences, but no edema about eyes existed. His tongue was coated and his breath very foul. He was pale but much less so than his son. There was no swelling of the legs. The biceps, hamstrings, and calf muscles were quite tender, especially at the junction of the tendons with the bodies of the muscles. No nerve tenderness existed. No evidence of wrist drop. Reflexes normal. Movements of joints unattended with pain. When patient first became indisposed muscular movement created great pain. Examination of the thoracic and abdominal organs elicited nothing abnormal. Urinary examination negative. No diazo-reaction. Pulse 126, regular, full and strong. Temperature 99.6° F.

Examination of freshly-drawn blood showed a marked eosinophilia which evidently was not so great as in the first case. Differential count of 500 leucocytes gave the following result: Polymorphonuclear, 49 per cent.; small mononuclear, 18 per cent.; large mononuclear, 1.8 per cent.; and eosinophiles, 31.9 per cent. November 22, 1899, Dr. Ferguson excised a small portion of the right biceps muscle. Sections of this were examined in the usual manner, but without trichinæ being discovered, although a few granular areas of myositis were found.

Case I. is very interesting because of the entire absence of gastro-intestinal symptoms, such as vomiting, colic or diarrhea, and of great muscular pains. The only severe pains from which he suffered were those provoked by movements of the eyeballs. But one characteristic objective symptom was present, namely, swelling of the face and about eyes and over region of tibiæ. The case certainly was atypical and its true nature was only disclosed by a study of the blood which showed an enormous eosinophilia with a corresponding reduction of the polymorphonuclear neutrophiles. This led to the excision of the muscles with, as a reward, the finding of numerous non-encapsulated trichinæ, together with the pathological changes in the muscles excited by their presence.

The clinical history of Case II. was typical of a distinctly mild attack of trichinosis. The recurring chills, the fever, cramps in the stomach with diarrhea followed by severe headache and pains and aches all over the body, with soreness and tenderness of the muscles, all pointed to trichinosis. All of these symptoms, however, could have been easily counterfeited by those of *la grippe*, typhoid fever, or by an erratic type of rheumatism, and this error could have been more easily committed, owing to the general appearance of the patient and from the fact that he did not appear ill and was able to walk round the ward during his short stay in the hospital. But here, again, the blood-examination cleared up all doubt by showing a decided increase of eosinophiles. Although we were unable to find the trichinæ in the muscles, a few sections showed the characteristic changes incident to their presence.

These two cases, then, illustrate very clearly the great assistance rendered by a careful examination of the blood in establishing the diagnosis of trichinosis and are entirely confirmatory of the results of Dr. Brown's painstaking study of the condition of the blood in the peripheral circulation in this disease.

Since the publication or Dr. Brown's original articles, eighteen additional cases of trichinosis have been recorded, making with the two herein reported twenty in all. In nineteen of this number the presumptive diagnosis of trichinosis was made from the presence of marked eosinophilia alone, which diagnosis was subsequently confirmed in all save a few cases by actually finding trichinæ together with their pathological changes incident to their presence in the muscular tissue removed from the patients. In a fatal case reported by Dr. Howard of Cleveland a single examination of the blood disclosed the presence of no eosinophiles, although eosinophiles were found in the muscular tissue after death. It is possible in this case that repeated examinations of the blood might have shown an eosinophilia. It is also possible that in fatal cases of trichinosis shortly before death, a marked diminution or entire absence of eosinophilia in the peripheral circulation occurs. Although eosinophilia occurs in several diseases, notably leukemia, asthma, chronic eczema, pemphigus, prurigo, psoriasis and in individuals affected with some forms of intestinal parasites; it does not occur in any disease the symptoms of which resemble trichinosis. It is therefore very important that a systematic blood-examination be made in all doubtful cases.

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THE SURGERY OF THE GASSERIAN GANGLION.[1]

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THERE is no more painful and distressing malady than trigeminal neuralgia, nor a more difficult and dangerous operation in surgery than extirpation of the Gasserian ganglion, which has been so successfully performed for its relief.

[1] Read before the Southern Surgical and Gynecological Association, Atlanta, Ga., November 15, 1900.

Neuralgia of the fifth nerve, variously described as trifacial, trigeminal, tic douloureux, prosopalgia, etc., is more frequent than all other forms of neuralgia, and has been recognized and treated in a variety of ways for centuries.

The *Lancet* (1829, p. 367) gives an interesting account of the discovery of notes and memoranda which were presented by Lord King to Dr. Clarke, at the College of Physicians, London, June 1, 1829, showing that John Locke was a physician, as well as a philosopher. The notes referred to his diagnosis and treatment of the case of the wife of the English Ambassador at Paris in December, 1677. He described with great accuracy the symptoms of tic douloureux, with reflections as to its cause, and the best method of treating it.

Neurotomy, for relief of facial neuralgia, is not a modern operation. It was first suggested by Albinus and Galen, and it was employed by Marechal, surgeon to Louis XIV., as early as the middle of the eighteenth century.

In 1798 John Haighton published an account of a successful operation for neuralgia of the face by section of the affected (infra-orbital) nerve. The operation was so frequently employed after this that it fell into disrepute. It was revived again about 1852 by Roux and others (Treves' Manual of Operative Surgery). Nerve-stretching succeeded neurotomy, and later neurectomy came into vogue. Horsley (*Brit. Med. Jour.*, Nov., 1891) mentions another method, the thrusting of a red hot wire into the foramen of exit, but this never came into general use. Nussbaum introduced ligation of the internal carotid, but this was soon abandoned.

In 1858 Carnochan of New York advised the removal of Meckel's ganglion, and the trunk of the nerve at its exit from the foramen. He reached the ganglion through the antrum. There have been many modifications of this operation, but they are all practically Carnochan's method. Leucke of Strassburg removed Meckel's ganglion by resecting the zygomatic arch, and turning it upward with the fascia attached, and thus reached the pterygoid fossa and resected the nerve and ganglion. Great deformity was the result, so Lossen of Heidelberg turned the flap downward instead of upward.

Horsley elevated the eye from the floor of the orbit, opened the infra-orbital canal, and followed the course of the nerve until he could divide it at its exit from the foramen rotundum. In 1872 Pancoast resected the inferior division of the nerve at its exit from the foramen ovale. Kroenlein resected the inferior and middle branches of the nerves as they emerged from the skull. The operations from the outside of the skull proving unsatisfactory, J. Ewing Mears (*Trans. Am. Surg. Assoc.*, 1884) proposed an intracranial operation, and removal of the Gasserian ganglion. Rose of London (*Lancet*, Nov. 1, 1890) made the first extirpation of the Gasserian ganglion on April 2, 1890. About the same time Andrews of Chicago made the operation also. Rose being the first to publish his results, the operation became known by his name. They both reached the ganglion by trephining the base of the skull in the pterygoid fossa, in front and at the outer side of the foramen ovale. The zygomatic arch was resected and turned upward, the coronoid process was divided and turned forward with the temporal muscle.

The Hartley-Krause method succeeded this and was described about the same time by Hartley in New York, and Krause in Germany. The time and method of both operators was so nearly identical that it has received the name of both. Hartley's first operation was made August 15, 1891 (*N. Y. Med. Jour.*, March 19, 1892) and Krause's February 23, 1892 (Die Neuralgie des Trigeminus). The operation consists in raising an omega-shaped osteoplastic flap from the temporal fossa. The only difference in the two methods being that Hartley used a chisel to raise the flap, and Krause an electric saw. The Hartley-Krause method, with or without modifications, is the one now employed by most operators.

To the brilliant operations and able writings of Tiffany,[1] Keen,[2] Spiller,[3] Carson,[4] Abbe,[5] Murphy,[6] Cushing,[7] Dana,[8] and Beck,[9] we owe in a large measure our present knowledge of this disease, and the best methods devised for its relief; and to them the writer is chiefly indebted for the information contained in this paper.

Anatomy.—In order to properly appreciate this affection, and the hazardous nature of the surgical intervention necessary to effect a cure, it might be well to briefly consider the anatomy of the region involved. The fifth nerve emerges from the brain with two roots. The posterior root, consisting of about a hundred bundles of nerve fibers and stronger than the other, is first visible in the groove of the crus cerebelli ad pontem. Its fibers are sensory. The anterior root is thinner, and covered by the posterior. It emerges from the gray nucleus of the fourth ventricle, and is first visible coming from the front portion of the pons Varolii. Its fibers are motor. These two nerves join, and, perforating the dura mater, their course leads toward a shallow depression in the petrous portion of the temporal bone called Meckel's cave. There the posterior sensitive root develops into a ganglion. Its fibers spread and ganglionary cells develop into a flat, oblong body, known as the Gasserian ganglion. Motor fibers have no part in this formation. From the convex border of the ganglion three nerves emerge, the ophthalmic, superior maxillary and inferior maxillary. There are very important structures in the immediate vicinity, the internal carotid, middle meningeal, and cavernous sinus.

The nerves leave the cranial cavity by different openings, the supra-orbital fissure, and the foramina rotundum and ovale, where the third branch is joined by the motor fibers of the anterior root. The object of the surgeon is to remove the sensory portion of the nerve and to leave the motor. This is very difficult, as they are close together, and deeply situated.

Etiology.—Victor Horsley gives as the causes of trigeminal neuralgia (1) cold; (2) worry and overwork; (3) alcohol; (4) ostitis of the alveolar borders of the jaws due to dental caries; (5) rhinitis; (6) traumatism. Authorities differ as to whether the disease is of central, or peripheral origin, but the consensus of opinion is that it is peripheral. It occurs in the majority of cases about middle life, or later, and is due to degenerative change in the nerve and its ganglion, and probably in the blood-vessels supplying it. It attacks women twice as often as men. It seldom attacks men under forty, and is three or four times more frequent in women than men under forty. Heredity is of little importance. In about one-fourth of the cases there is a history of migraine, but the most common exciting causes are cold, worry and overwork. The disease begins as a trigeminal neuritis, with herpes, associated often with disease of the gums and teeth. In a great majority of the cases, it is the second or third branch that is involved. It rarely begins in the ophthalmic, or remains localized in that branch, while it often affects the second and third branches for a long time. Dana (*Jour. Am. Med. Assoc.,* May 5, 1900, p. 1100) divides the disease into two types: (1) The migrainous type of early life. A disorder of the central sensory neuron, which may later develop into a true degenerative neuralgia. (2) The more common form, occurring after forty. A true infective neuritis, due to some local disease of the gums, or osseous tissues.

Pathology. — The following degenerative changes were found on microscopical examination by W. G. Spiller in two cases operated on by Cushing and illustrate the pathological condition that usually exists (*Jour. Am. Med. Assoc.,* May 5, 1900, p. 1094): (1) Tumefaction of the medullary sheaths, and axis cylinder, in certain bundles only, in all three divisions of the ganglion. (2) Tumefaction of the axis cylinder in a portion of the sensory root. (3) Numerous spaces in a portion of the sensory root, possibly resulting in part from degeneration of nerve fibers. The sensory root was not normal and a return of the pain was possible. (4) Intense degeneration in the center and peripheral end of the ganglion, and its peripheral divisions.

The blood-vessels were not distinctly diseased, and there was no evidence that the condition of the nerve fibers was due to vascular degeneration. The nerve-cells offered no evidence of the cellular origin of tic douloureux.

Diagnosis.—The fearful and distinctly localized pain renders the diagnosis easy, for as Trousseau (*Clinical Medicine*) describes it, "An individual, who but a moment ago was perfectly free from pain, is suddenly seized with horrible pain while talking. He puts his hands to his face and presses it with considerable force, sometimes rubbing it so much and so often that the hair on that side falls off. He goes on rocking himself, holding his head between his hands and uttering half-suppressed groans. This lasts for ten or fifteen seconds, one minute at most, and all is over without convulsions." The pain is so excruciating that the victims of it will readily consent to any operation, and are heedless of its danger, preferring death, often contemplating, and sometimes committing suicide to escape it. A patient of Murphy's expressed it most forcibly when he said, when told of the risks of an operation, "Anything you can get out of this better than death is clear profit."

Treatment.

Medical.—No permanent good has ever been accomplished by narcotic drugs. In the early stages of the disease, during the first or second year, heroic doses of strychnine often arrest and control it. In cases that have existed over six or seven years, a remission may occur, but no lasting benefit is obtained. Electricity sometimes palliates, but seldom cures.

Surgical.—A variety of operations have been devised, developing gradually from the simplest to the most intricate and dangerous. (1) The nerves were cut (neurotomy). (2) Portions were excised (neurectomy). (3) They were pulled and twisted out of their bony canals (neurexeresis). (4) Nerves were divided close to their central origin. (5) Extirpation of the Gasserian ganglion.

Simple section of the nerve gives immediate and magical relief, but the result is temporary, owing to the reunion of the nerve-channels by reparative action. If the lesion is central, a superficial operation is useless. If it is peripheral, it is necessary to remove enough to prevent bridging of the gap. The value of resection, therefore, depends upon the amount of nerve removed. Unless the duration of the disease is such that there is little doubt that the ganglion is involved, a peripheral operation should always first be made. If, however, there is recurrence of the pain after one or more peripheral operations, the more radical operation of removal of the Gasserian ganglion is necessary to effect a cure.

Tiffany (*Trans. Am. Surg. Assoc.,* Vol. XIV., 1896) offers the following suggestions for deciding when an intracranial operation should be made: "(1) *Intracranial operation to be thought of* (*a*) If more than one branch is affected. (*b*) If the painful area receives filaments from the branches near their exit from the head, *e. g.,* tongue, temporal region. (*c*) If the pain is not the expression of constitutional disease. (*d*) If a cause central to the ganglion does not exist. (*e*) If other measures have failed to relieve. (2) The intracranial operation that should be done, is removal of the lower two-thirds of the Gasserian ganglion with the second and third branches, as far as the foramina of exit from the skull, all in one piece, so as to be certain of the amount of tissue taken away. (3) The upper third of the ganglion and first branch may for the present not be excised for neuralgia."

Three routes have been followed in making this operation.

1. *Transmaxillary route* (Rose); removal of the superior maxillary bone. A dangerous method, as the cranial cavity is left in contact with the mouth, and infection is most likely to follow. There is much deformity, and this route has been practically abandoned.

2. *Pterygoid route* (Rose and Andrews); exposure of the foramen ovale by temporary resection of the zygomatic arch and coronoid process of the inferior maxillary. This route is difficult and dangerous, although not opening into the cavity of the mouth. The wound leaves much disfigurement. There may be necrosis of the zygoma, and the coronoid process may be lost. There is often severe hemorrhage from the internal maxillary artery, and the pterygoid plexus of veins. It is difficult to find the foramen ovale, the opening being sometimes hidden by the pterygoid spinous ridge. In trephining, the Eustachian tube may be opened and septic infection result. The dura mater may be opened, and the internal carotid may be damaged. The ganglion cannot be clearly exposed, and frequently only fragments are removed.

3. *Temporal route* (Hartley-Krause); this is the best route and the one followed by most operators with or without modifications. The advantages are a short incision, with little division of the muscle, and a cicatrix which is hidden by the scalp. The ganglion can be exposed with slight risk of opening the subarachnoid space. The squamous portion of the temporal bone is the only portion of the skull divided. There is no danger of communicating with the Eustachian tube and pharynx.

The principal difficulty and greatest danger is due to hemorrhage. The middle meningeal artery is often lacerated, necessitating much delay in reaching the seat of operation, frequently requiring packing, and a postponement of the operation. In order to reach the ganglion, it is necessary to elevate the brain and dura, so that it is often impossible to preserve the artery at the foramen spinosum. Krause advocates the double ligation of the vessel after it emerges from this foramen. This is difficult and often unsuccessful. The high temporal route is attended by many difficulties, which have been obviated to a great extent by Cushing's (*Jour. Am. Med. Assoc.*, April 28, 1900, p. 1038) modification of the Hartley-Krause operation, from which it differs only in detail. He calls it the "Direct Infra-Arterial Method." "The trephine opening through the fossa temporalis is sufficiently low, so that the extradural manipulations may be conducted *underneath the arch made by the middle meningeal artery*, which is retracted with the dura, and yet remains uninjured at its two fixed points, namely, at the foramen spinosum of the temporal bone, and the sulcus arteriosus of the parietal. Under this arch, with but slight elevation of the temporal lobe, the entire ganglion and its sensory root may be exposed. This method gives the maximum of exposure, with the minimum of cerebral compression, and injury of the blood vessels." The steps in the operation are as follows:

1. *Formation of Muscle Flap and Exposure of Temporal Fossa.*—A horseshoe-shaped skin incision is made in the temporal region, its base about 4 cm. in breadth, corresponding to the zygomatic arch, and its convexity reaching about 5 cm. above it, but slightly higher than the pinna of the ear. The incision is lower and smaller than the Wagner osteoplastic procedure as adopted by Hartley and Krause. This skin flap is turned downward, some branches of the temporal artery being divided, the underlying temporal fascia is exposed well on to its attachments to the zygomatic arch, and the posterior, or temporal border of the malar bone. An incision is then made through the temporal fascia concentric with and just inside of the skin incision, and at the base of the skin flap it is carried along the middle of the outer surface of the zygomatic arch, through the periosteum down to the bone. The periosteum is then elevated from the bony arch, leaving the masseteric attachment at its lower edge uninjured, and the zygomatic processes of the malar and temporal bones are divided with heavy forceps. An incision concentric with the skin incision is then carried down through the temporal muscle, and the muscle is scraped away from the bony wall of the temporal fossa, to which it has no attachment in this situation, and retracted downward together with the resected portion of the zygoma, and into the space which this bony arch formerly occupied. In this way the lower portion of the temporal fossa, as far down as the attachment of the external pterygoid muscle, below the infratemporal crest is well exposed.

2. *Exposure and Elevation of Dura as far as the Ganglionic Sheath.*—With mallet and gouge a small opening is made through the most prominent portion of the exposed great wing of the sphenoid, enlarged with rongeur forceps to a diameter of about 3 cm., its lower margin carried well down, and including the ridge between the temporal and zygomatic fossa—the crista infratemporalis. The uninjured middle meningeal artery runs on the dura thus exposed, across the opening in the bone as the diameter of its circle. The dura with this vessel may then be lifted almost bloodlessly from the base of the middle fossa until the first point of firm dural attachment of the foramen ovale is reached.

3. *Elevation of Dura With Meningeal Artery and Exposure of Upper Surface of Ganglion.*—By careful blunt dissection, and by working at the dural attachment about the foramen rotundum, and in the line between this point and the foramen ovale, where it is again firmly attached, the edge of the dural envelope which encloses the ganglion and its peripheral ultra-cranial branches may be split, and by careful elevation the entire upper surface of the stellate structure exposed well back on to the sensory root, the ganglion being left in its bed still adherent in the underlying portion of the envelope.

4. *Liberation and Extraction of the Ganglion and Its Branches.*—After the exposure of the upper surface of the ganglion and before division of any of the peripheral branches, these three nerves with the ganglion and trigeminal root should be liberated from the attachments to the base. This is readily accomplished by working with the blunt dissector in the crotches between the second and third divisions, and also along each side of the nerves. After the ganglion and the second and third have been liberated, and can be lifted up by the dissector, it is necessary to free the superior and internal edge of the trigeminal root and first division. These manipulations should be conducted as near as possible to the sensory root, since that is the safest point, and one at which there is less likelihood of injuring the cavernous sinus and sixth nerve. The ganglionic structure may thus be completely obliterated, without division, or laceration of a single branch. With a pair of hemostatic forceps (Kocher's) the structure may then be grasped first back of the site of the true ganglion on the trigeminal root; the three peripheral divisions are in turn held up with a blunt nerve hook and divided with scissors close to their foramina; the sensory root is then evulsed by means of the previously attached pair of forceps.

5. *Closure and Dressing.*—The zygoma and flap of the skin, muscle and fascia are replaced. The resected portion of the zygomatic arch is replaced, and remains in position without wiring, as the masseter is paralyzed. The temporal muscle and fascia are secured in place by fine interrupted sutures at the upper curve of the incision, and a few sutures are taken in the divided periosteum and fascia over the replaced zygomatic arch. In applying the dressing the eye is covered by a large sheet of rubber protective, which bridges across from the nose and forehead to the malar prominence of the cheek, and prevents the pressure of the bandage against the eye. Drainage is not employed. Primary union occurred in all cases, and the resulting scars were very slight. He has not found it necessary to suture the lids, and thinks the local reaction resultant to this procedure would be detrimental in case there was an ensuing keratitis, which is at times unavoidable. The simple protective dressing keeps the eye moist, protects it from dust, and the patients may dimly see through the covering. A Buller shield answers the same purpose.

Prognosis.

1. *The immediate result* of an operation is either relief or death. The relief may be partial or complete. If the entire second and third divisions and their respective portions of the ganglion have been removed, complete immunity will result. If the ganglion has only been partially removed, recurrence will follow.

Death may occur as an immediate result in several ways: (1) Shock, due to loss of blood usually. The use of saline infusion renders this unlikely. (2) Hemorrhage, which it is impossible to control. (3) Sepsis, with meningitis, due to lack of surgical cleanliness.

2. *Remote results* are: (*a*) Recurrence due to an incomplete operation. (*b*) Destruction of the eye due to failure to properly protect it. (*c*) Paralysis of the muscles of mastication, due to removal of the motor portion of the third division. This is grave only when the condition is bilateral. (*d*) Abscess of the brain due to rough handling during the operation.

Mortality.—Tiffany's table of 108 cases (to May, 1896) gives a mortality of 22.2 per cent. According to Carson's table of 100 additional cases (to March 25, 1899) the mortality was 11 per cent., a reduction of one-half (*Med. Rec.*, St. Louis. 1899, XXXIX.). Victor Horsley recently reported 21 cases with two deaths (*Practitioner*, Sept., 1900).

Conclusions.

1. Trigeminal neuralgia is an ascending neuritis, peripheral in origin. The second and third branches, rather than the first, are the ones most likely to be involved.

2. If the disease persists after several months' trial with drugs, electricity, etc., surgical intervention is indicated.

3. If only one branch is involved and the disease is not of long standing, as much as possible of the affected branch should be removed with a view of relieving pain and preventing the upward progress of the disease.

4. If more than one branch is involved, and the pain is severe and has persisted for a long time, the ganglion should be extirpated, all other means having failed.

5. The temporal route should be followed, the Hartley-Krause, or preferably, Cushing's modification of it, being the most rational procedure.

6. Pain will not recur with original severity in more than one or two per cent. of the cases operated upon, or in any degree in more than four or five per cent., and is invariably due to an incomplete operation.

7. It is important to remove the ganglion and its branches intact in order to be certain of the completeness of the operation and to insure a careful and thorough microscopical examination of the specimen.

8. The present mortality is about ten per cent. Increased experience and an improved technic will undoubtedly diminish this mortality, and dissipate the risks of this hitherto most formidable, difficult and dangerous operation.

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THE TREATMEMT OF BRONCHITIS IN INFANTS AND YOUNG CHILDREN.

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The treatment of bronchitis in infants and young children is so dependent for its success upon the etiology that a few preliminary thoughts seem warranted. Indeed, bronchitis has so many causes and is so frequently the accompaniment of some other pathologic condition that one often is perplexed as to the direction of the application of measures for its relief. It is one of the most frequent diseases and is probably produced by a greater number and variety of causes than any other disease of early life.

It may be primary or secondary. Primary bronchitis may be excited by cold, sudden changes of temperature, exposure to high winds, or great atmospheric humidity, or it may result from the extension of the catarrhal process from the upper air-passages; and it is also common in children suffering from rickets, anemia and malnutrition. In rare instances it is caused by the inhalation of irritating gases and vapors. It may accompany any of the acute infectious diseases; it is invariably present in measles and influenza, common in whooping-cough, scarlet fever and typhoid fever and infrequent in chickenpox and rötheln.

It may also be caused by microbial irritants. It is true that in health pathogenic micro-organisms are suspended in the secretions of the nose and nasopharynx and seldom pass beyond the large bronchi. In bronchitis, however, the ciliated epithelium of the bronchi is destroyed, thus diminishing the resistance to the invasion of such bacteria, so that various pathogenic micro-organisms have been found in the pulmonary alveoli. Numerous experiments have shown that pulmonary tuberculosis can be induced by causing an animal to inspire air charged with tubercle bacilli. If this particular bacillus will invade and infect the air-vesicles, it is not unreasonable to suspect the presence of less virulent organisms in the bronchi and bronchioles.

Although usually sporadic, bronchitis may become epidemic by being transmitted from one child to another by personal contact or through the medium of school-books, pencils, chewing-gum, clothing or, most frequently, by the promiscuous use of the handkerchief. Bronchitis is much more serious in young than in older children, the gravity usually lessening with advancing age. It is dangerous in the younger child because of its greater tendency to invade the smaller bronchi and air-cells.

In addressing treatment to this disease, we should not be hampered by any routine practice, because failure often comes from methods directed to all cases. The individuality of the child should always stand paramount.

Prophylaxis.—Appreciating the fact that the child has a predisposition to catarrhal conditions in general, or to bronchitis in particular, much can be done to prevent him from having attacks by attention to his personal and domiciliary hygiene. Especially in infants should explicit directions be given as to clothing. Many young children are made susceptible to the influence of cold by wearing unsuitable clothing. The maternal tendency is toward too heavy clothing. In cold weather light flannel underwear should be worn continuously, while the outer clothing should be adapted to the changes of temperature. The child should have a daily bath (80°-90° F.), to be followed by gentle rubbing with a coarse towel. The beneficial effects of daily inunctions of oils are more problematical than real. Such practices not only prevent cutaneous excretions, but also soil the child's clothing and often make an attractive baby repulsive. Weak and delicate children are too often confined to the house. Improvement has been marked by keeping the child out-of-doors most of the day. If the atmosphere is dry and cold, it is wholesome, but when damp it would be better for the child to remain indoors where the temperature of the room should vary between 68°-72° F. The temperature of the sleeping apartments of such children should be about 65° F. at night.

A slight coryza is not sufficient to keep a child indoors in pleasant weather. Cool dry and warm dry air are equally beneficial. If the child has fever, it would be better to keep him in bed and watch him, the object being to prevent the extension downward of an inflammation of the upper air-passages. The average case will usually recover promptly if kept in bed in a room well heated and well ventilated, given a simple, nutritious diet, and a mild cathartic—a dose of castor oil excelling all others.

Attempts to abort bronchitis by a hot footbath, free purging and profuse sweating are seldom successful. Such measures may prove injurious unless extra precautions are taken to prevent the child from taking additional "cold" by kicking off the bed-coverings.

Local measures when judiciously applied are often beneficial. Poultices are objectionable because they must be renewed so frequently that the child's rest is disturbed. The effect of the poultice is derived from a chest-jacket of cotton covered with cheesecloth or oiled silk. In many cases, especially where the heart's action is feeble, counter-irritants applied to the chest relieve pulmonary congestion. The turpentine stupe or, as many prefer, the weak mustard paste, may be placed under the jacket until the skin becomes sufficiently irritated, when it should be removed; it may be reapplied every six or eight hours. Blistering is never necessary.

Inhalations of watery or medicated vapors are valuable in relieving the embarrassed respiration by softening the thick bronchial secretion and in applying the medicament to the inflamed part. For infants and very young children this can be accomplished best by placing them under a tent into which the steam from a boiling kettle can be conducted. Older children will inhale the vapors from any one of the many inhalers offered for

sale in the drug-stores. When neither of these methods is practicable the air of the room can be saturated with moisture by having a kettle or pan of water constantly boiling near the child's bed. The following medicaments may be vaporized: Tincture of benzoin (compound), eucalyptol, carbolic acid, creosote, turpentine and terebene. Direct inhalation should last about ten minutes every hour or two; indirect (*i. e.*, through atmosphere of the room) vaporization may be kept up until the atmosphere of the apartment is saturated with the medicament.

Expectorants are not well borne by infants and much care should be exercised in their selection. In the dry stage of bronchitis small doses of ammonium iodide in an agreeable menstruum, to which a few drops of syrup of ipecac are occasionally added, will usually hasten the secretion, thus relieving the swelling of the mucous membrane, rendering the cough less painful and lessening the frequency of respiration. In older children the same drugs in larger doses are beneficial. When the secretion becomes very profuse, the syrup of hydriodic acid is valuable.

Opiates of every description should be withheld as long as possible from infants; but when the cough is harassing and the sleep disturbed, small doses of codein or a few drops of paregoric every two hours, for a few doses only, are justifiable. The older child is often benefited by a small dose of Dover's powder, or codeine added to a palatable mixture. The practice of adding some form of opium to every so-called "cough mixture," regardless of the age of the child, is fraught with much danger. We can relieve or stop the cough, but by doing so we destroy one of Nature's safeguards by which the secretions are removed and the engorged bronchioles freed.

Emetics are seldom indicated, unless the exudate is so profuse, or the stomach so distended with gas from undigested food as to embarrass respiration. In the very young and feeble either of these conditions may be promptly overcome by an emetic of the syrup or wine of ipecac, which is seldom attended by depressing effects.

Cardiac stimulants are required in most severe cases, especially in the feeble. Alcohol in some form is the best and is well borne by children. In cases in which the heart does not seem strong enough to overcome the intrathoracic engorgement a valuable adjuvant will be found in nitroglycerin, which is most effective when administered hypodermatically. While it is injudicious to begin stimulation too early, it would be equally so to delay it until the heart is too debilitated to respond to the strongest stimulants. In bronchitis, or in pneumonia, the heart's action should be jealously guarded.

Respiratory stimulants of strychnine and atropine are required in a very small percentage of cases. They may bridge over the crisis, but should be watched by the physician, and never entrusted to the discretion of either nurse or layman.

Severe attacks of dyspnea and feeble respirations must be promptly met. The passive pulmonary congestion and the overfilled right heart must be relieved, and the compressed and empty air-vesicles reinflated. All of these indications may be fulfilled by Jacobi's plan of flagellation or spanking, which serves the twofold purpose of causing the infant to cry, which induces full, deep inspirations distending the air-vesicles and reddening the surface, which attracts the blood from the distended intrathoracic blood-vessels. The same results may be obtained by H. C. Wood's method of alternate hot and cold douches to the chest. Much less heroic and probably quite as effective as either of these methods is the general hot bath (110-120° F.). Mustard may be added to the water. Oxygen by inhalation may mitigate the feeling of suffocation, but the relief is only temporary.

The treatment of fibrinous bronchitis is at best unsatisfactory. When the exudate causes attacks of dyspnea, inhalations, as indicated above, may soften the membrane which will be expelled by coughing; but an emetic is sometimes more effective in removing the casts. Between the severe paroxysms potassium iodide and hydriodic acid are useful.

Chronic bronchitis is usually secondary to some debilitating ailment, consequently the indications are to treat the primary disease by improving the patient's general health.

1 Dupont Circle.

CLINICAL MEMORANDUM.

FATAL ANGINA PECTORIS, WITHOUT LESIONS OF THE CORONARY ARTERIES IN A YOUNG MAN.

By T. E. BULLARD, M.D.,
of Schuylerville, N. Y.;
With Description of the Heart, and Remarks upon the Case,
By WILLIAM OSLER, M.D.,
of Baltimore.

J. J. H. was twenty-six years old, 5 ft. 10 in. in height, weighed 186 lbs., very strong and active, and was, to all appearances, in robust health just previous to his death. I had known him for fifteen years. His father is a printer and has occasional attacks of epilepsy. His mother is in fair health; his four sisters are all well but one, who has heart-disease.

As a young man, the patient was somewhat eccentric. In about the year 1892 he enlisted. While in the army he engaged a good deal in ball-playing, football and athletics generally. He had been a very heavy smoker. He had not had syphilis.

In the spring of 1895 he was discharged and about this time married. Shortly afterward he returned to his home. Talking with me one day, he told me that he had had an attack of heart trouble while in the army. He did not say that he had had more than one, or that it was serious. He remained in town a short time, when he left.

I heard of him working as a telephone lineman and as fireman on a steamboat. After a few months he reenlisted and was sent to Ft. Keogh, Montana. In the spring of 1896 he was discharged for disability and came home.

He told me that while in the West he had been well for a few months, had marched some hundreds of miles, but that in the winter he was taken with severe attacks of heart trouble. The name of his disease he did not remember. He was in the hospital several months. He described his attacks as coming on at first every other night, then four or five times a week; said there was a most intense pain in the heart, and awful cramps in his arms, that he was given large doses of morphine, digitalis and nitroglycerin. He said that his attacks increased in frequency and in severity, and at one time after he had had an attack he was considered dead, that they were about to remove him to the dead-room when he showed signs of life. All attempts to cure him were despaired of and he was discharged.

A few nights after I had learned from him the story of his winter's sickness, I was sent for to come to his home. I found him in bed, suffering with an intense paroxysm of pain in the cardiac region. His muscles were cramped and he had stopped breathing. He thrashed around in bed for a few moments, and then there seemed to be a cessation of the pain and a relaxation of the spasm. He breathed rapidly, had a few minutes respite, and then the paroxysm of pain and the spasm of the muscles returned. The chest became fixed and for the time being it was impossible for him to breathe or do anything but thrash about in his agony, apparently trying to jar something loose in his chest or heart.

His pulse during the interval was about 130. Just before the paroxysm it decreased in force and frequency to about 100. Sometimes there seemed to be a distinct increase in the force and tension with the decrease in frequency. During the paroxysm the pulse was very faint and slow, and as soon as it was past the pulse immediately acquired a rate of about 130 again. I gave him morphine, digitalis and nitroglycerin. The attack passed off in a few hours.

Seven days later I saw him in another attack similar to the first. This was May 19, 1896. After that he did not have another attack until July 7, 1896, when he had one similar to that which I have described. This was repeated on the 9th, 14th, 17th, 22d, 25th and 31st of this month and also on August 4th, 6th, 9th and 12th. These continued at decreasing intervals and with increasing severity until the next spring when the intervals increased and the severity of the attacks decreased. During the attacks there was no wheezing in the tubes. Exertion did not seem to cause them.

His attacks were more sure to come on and be severe after a cold, damp day. They most frequently came at from 7:00 to 10:00 P. M. I never knew him to have but one severe attack during the day, and on that day he had been walking in the hot sun, and was somewhat excited over a fireman's tournament which he was attending, but this attack was a very severe one.

I have notes of 105 attacks during which I was with him. At times the attacks were of the utmost severity. The pain was so intense that he would lose all consciousness. The muscular spasm extended to nearly all of the muscles of his chest and upper extremities, occasionally to his abdomen and legs, although it was always most severe in the left arm, neck on left side, chest and right arm, named in order of intensity. Some of the attacks lasted as long as five or six hours. There was always a similarity in the attacks, yet they were not exactly the same. Toward spring the pulse-rate in the intermission was not as rapid and was slower just before and during the paroxysm. Time after time his respirations ceased for so long a time and his pulse became so feeble that he seemed to be dead. At times every muscles was in such a spasm that he could be picked up without his bending in the least. Sometimes to pick him up a few feet above the bed and drop him was the easiest way to reestablish respiration, and it seemed that had it not been for the most active efforts, rubbing of the muscles and artificial respiration, he would never have breathed again. This working over him had to be kept up for hours.

In order to relieve his attacks I at first depended principally on morphine. The doses had to be rapidly increased until 8 to 12 grains were given in order to have any effect on the patient. Digitalis, nitroglycerin and nitrate of amyl were used as indicated. The latter never seemed to be of much benefit. When owing to the repeated use of morphine, it seemed to have but little effect, ether was tried. I used to give him four or five grains of morphine and then etherize him. As a rule, after he was nicely under the anesthetic, the spasm would stop, the pulse would remain even, and if the anesthetic was continued for perhaps 30 minutes he would sleep on several hours and have no more pain that night and very seldom the next night. When it became so that it was almost impossible to etherize him I tried chloroform. This seemed to work equally well for a short time. Later, not being pleased with its effect, I discontinued its use. I finally depended almost entirely upon large doses of morphine. In the spring, after he ceased to have his attacks, he showed no evidence of having contracted the morphine habit. After the attacks had apparently ceased he went to New York, had an attack in a saloon, was taken to the hospital, where, according to the papers, the doctors did not know what to make of him. He went to Germany, came back again, worked on a dairy-farm near Boston, doing hard work, then came back to this place again, and remained for a few weeks, when he again left.

This was in the fall of 1897. I lost track of him for some time, but when I did hear from him I learned that he had gone to Europe with a circus.

Whether he had any attacks during that winter, I do not know.

In the summer of 1898 he returned to this place and found employment as a teamster, at which occupation he worked until the middle of winter. During the winter he had a few attacks, but they were not as severe as usual. In the early spring of 1899 he left town again and worked in a paper-mill in New Jersey until the fall of 1899, when he again returned to this place. He had two or three attacks at intervals of a week or more in which I saw him. They were not of the most severe type.

November 27, 1899, he came to my office about 11:30 P. M. and told me that his pain was unusually severe. I immediately gave him several grains of morphine and noted his condition carefully. I saw that it was serious. His pulse in the interval was about 120 to 130. Just before a paroxysm it would slow down during the space of thirty seconds to about 90 and became very faint, then the spasm of the chest muscles suddenly came on. The spasm lasted from one to two minutes during which time he did not breathe. Then the breathing began again, the respirations would be rapid, and his pulse immediately ran up to 120 or 130. After having given 5 grains of morphine, which was two grains more than I had given at any time this fall, and, failing to relieve him, I gave him a little chloroform. I wet the mask only once and held it to his face a few seconds. At this time the muscles of the chest became fixed and remained so, the breathing being entirely diaphragmatic.

It was 12:55 A. M. when I gave him the chloroform. At 1:00 A. M. his pulse was 68; at 1.05 it was 72. At this time I gave him some nitrate of amyl, hoping to help respiration. It did not seem to help him, and the respirations grew more rapid and short until they ceased entirely.

A short, sharp pressure over the ribs, together with artificial respiration, reestablished breathing, which continued for some time. At 1:25 A. M. his pulse was 127; at 1:35 A. M. it was 90. I gave brandy hypodermically freely. Strychnine, nitroglycerin and digitalis were also used in medicinal doses. Hot applications and rubbing were employed to assist in restoring the circulation.

He remained unconscious and the spasm of the chest which had been constant for some hours, relaxed. The attack now continued with intermissions and paroxysms. The pulse during the intermission was about 90. Just before and during the paroxysm it decreased to 60 or less. The interval between the paroxysms grew shorter, the respiration more shallow. The pulse became slower both before and during the paroxysm; during the height of the paroxysm it was at times about 30, and then for 15 seconds could scarcely be felt. At about 6:00 A. M. the paroxysms ceased. His breathing was short, shallow, rapid and regular. The pulse increased to about 120. It was weak and he remained unconscious. The respirations became more shallow, the pulse more feeble, and he died at 6:40 A. M.

At the autopsy we found numerous adhesions between the left pulmonary and costal pleuræ. The heart weighed when removed 14 ounces and 2 drams. It was apparently displaced somewhat to the right, although the displacement may have been post-mortem. The heart was immediately sent to Dr. Osler for examination, who sent the following report and remarks bearing on the general condition.

The heart was of average size for a man of 186 pounds. Considerable amount of subpericardial fat. No pericarditis. The pericardium was everywhere smooth and glistening. The muscle of the left ventricle looked beefy and red; the wall measured in thickness 15 to 20 mm. The papillary muscles were not sclerotic. The mitral segments were thin and showed no marked abnormalities.

Right ventricle, muscle looked red and natural. The tricuspid valves were normal. The pulmonary artery measured exactly 7 cm. across the top of the valves. There was no sclerosis and the valves looked normal. The aorta measured not 6 cm. just above the ring, a small vessel for a man of five feet and ten inches, weighing 186 pounds. The arch only admitted the index finger to the middle of the second joint. The anterior coronary artery was not sclerotic in its course. There were a few flakes of atheroma along its course. Its orifice was large, unusually so, nearly 4 mm. in diameter. There was no atheroma in its immediate vicinity. Posterior coronary artery was not so large; quite free in its course. There was a small, supplementary coronary artery. No atheroma in the neighborhood; no atheroma in its course. No thrombi or emboli in either vessel.

There were a few scattered flakes of atheroma in the aorta. The aortic valves were a little thickened about the corpora Arantii and about their attachments.

On slicing the heart muscle it was red and natural looking; no infarcts; no sclerosis of its muscular fibers nor of the walls of the blood-vessels.

In men under thirty years of age angina pectoris is a very rare disease. There are cases with syphilis in which an acute aortitis is associated with severe and even fatal angina. More common are the cases of a neurotic type in high-strung, nervous persons who have been heavy smokers and given to excesses of all kinds. I have notes of four or five of this sort in young men and have described them in my monograph on angina pectoris (pp. 94-95). In Dr. Bullard's case the extent of the muscular spasm was unusual, although it is not unknown in the ordinary form of the disease. The association of epileptic seizures with angina has been described in the monograph (p. 64). The intensity of the attacks, their long duration, the fatal termination, and the negative condition of the heart and arteries make the case one of unusual interest.

MEDICAL PROGRESS.

Heart-Disease or Epilepsy.—In a few cases, writes F. S. Pearce (*Annals of Gyn. and Ped.*, Nov., 1900), a petit mal with affection of the heart action resembles syncopal attacks independent of the epilepsy neurosis. Organic heart-disease is rarely the cause of convulsions, and then paralysis or death generally follows the spasms. A slow, full, irregular pulse, less frequent and variable, the apparent unconsciousness, a tendency to rigidity without convulsions, and sweating and cold extremities, all favor the hysteroid or epileptoid nature of the attack, while organic heart-disease, cyanosis or cardiac pain point to true syncope.

Harmful Effects of Antitoxin.—While we believe that in the treatment of diphtheria and tetanus, writes W. H. Park (*Archives of Pediatrics*, Nov., 1900) the beneficial effects of antitoxins far outweigh the deleterious, yet eruptions, changes in the blood, and constitutional disturbances occasionally follow the serum injections. These are more marked from the serum of certain horses, but in susceptible persons may develop from almost any serum. The experiments of the author point to the probability that both the antitoxins and the harmful principles are substances having the properties of globulins, and with our present knowledge cannot be separated.

Gastric Surgery.—This important topic is reviewed by G. Kelling (*Arch. f. klin. Chir.*, Bd. 62, H. 2) in the following significant terms: (1) Gastro-enterostomy is indicated when through mechanical interference the normal path through stomach (hour-glass stomach), pylorus or upper duodenum is abnormal. On the other hand, such obstruction in duodenum low down or jejunum high require direct treatment and contraindicate gastro-enterostomy. (2) Rapid regular emptying of the stomach also calls for this procedure which is greatly aided by placing it at the fundus and by closing the pylorus. (3) Patency of the fistula is guaranteed only by shutting the pylorus, which also checks return of food into the stomach. (4) In enteroptosis the posterior gastric wall is the best site of union. (5) With a very large, lax stomach Roux's method is best, with the entero-entero-anastomosis added, except when the gastric wall is so hypertrophied as to provide a spur to prevent regurgitation. (6) Spur-formation arises from a disproportion between the diameters of the fistula and of the intestine, entirely avoidable through proper technic. If the suture is the ordinary continuous type, it is usually safer to add an entero-entero-anastomosis. (7) Along the proximal loop of this secondary anastomosis the distance from the stomach should be not over ten centimeters. (8) The strength of the suture line must not be tested with improper food. Rather large quantities of fluid diet are less dangerous than even small masses of solids which can easily cause perforation. (9) Rapid emptying of the stomach depends upon the fact that for the most part gastric peristalsis ceases when the duodenum is full. (10) Intestinal digestion of albumin and fat is less active, because the stimulus excited by the acids and fat upon hepatic and pancreatic secretions for larger degree fails. (11) Flow of bile and pancreatic juice into the stomach is not necessarily injurious. (12) Hydrochloric acid is less thoroughly neutralized than when it first reaches the duodenum. In weakly subjects with hypersecretion it is therefore advisable to make a very long loop—Von Hacker's method, with entero-anastomosis. (13) The disadvantages of the gastro-enterostomy are in time compensated for, in degree and delay according to the resistance of the organism. Hence the operation should be done, before the causal disease has too greatly reduced the constitution. (14) The most normal method with least after-symptoms is Von Hacker's with the entero-entero-anastomosis. If the pylorus is patent it should be sutured, so as to insure full function of the gastro-enteric fistula.

Uterine Fixation.—The functional results in uterine fixation are apt, says Max Cohn (*Zeitschr. f. Geburtsh. und Gynäk.*, Bd. 43, H. 3), to be somewhat better in the ventral than in the vaginal method. In other details the comparison stands in the following terms, from the material available at the Breslau clinic: Vaginal fixation restores the relation between the fundus uteri and the bladder, displaces the portio vaginalis, is useless in retroflexions with adhesions unless these are freed through the cul-de-sac of Douglas, causes functional difficulties during parturition by changes in the relations, is less dangerous intrinsically, causes no hernia, leaves no scar for intra-abdominal adhesions, has a shorter healing process and fewer subjective sequelæ, and probably more nearly restores natural anteversio-flexis.

Gastroduodenostomy.—E. Villard (*Revue de Chir.*, Oct., 1900) describes a subpyloric anastomosis between the right extremity of greater curvature of the stomach and the left aspect of the descending part of the duodenum. The union may be made in any of the well-known methods and placed either on the anterior or on the posterior surfaces of the viscera. The site considered best, from the author's experience, is the latter, reached by tearing through the right limits of the great omentum, exposing to view the upper anterior surface of the pancreas over which the new union then passes. Advantage is gained by passing a heavy suture one or two centimeters above and below the limits of the vertically-placed anastomosing incision, through the sero-musculares of each viscus, which serve as tractors and as final stout reinforcing sutures when tied. By means of these, in the writer's choice, the stomach and bowel are brought upward, the posterior rows of sutures placed, then the anastomosis is done and, finally, the anterior banks of stitches inserted. Lavage the night and the morn-

ing just prior to the operation is most important, except in those too enfeebled to stand it. Deep ether narcosis is best, as in all laparotomies, because it combats shock more. In the after-treatment, fluids in dram-doses, except water and gaseous fluids, are allowed at once at short intervals, increased slowly in amount and time, until about one week after, when more solid food may be tried. Morphine to complete repose is absolutely advisable for the first two days, unless the subject is too feeble. The value of the operation lies in its brevity, simplicity, safety, respect for the normal physiology by permitting the gastric contents to empty above the biliary and pancreatic ducts, and in its freedom from the double anastomosis (with the increased shock thereof) in the modern gastro-enterostomies. It presents the difficulty of having the deep operative field more or less fixed against the vertebral column; but this is obviated by the fact that gastric cases are usually so thin that the posterior limits of the abdomen are most readily accessible. The indications are *par excellence* cicatricial non-cancerous or spastic pyloric obstruction, old ulcers or early cancers if not too near the outlet, and other conditions in which pyloroplasty or gastro-enterostomy would alleviate or cure.

Early Diagnosis of Ascites.—L. Landau (*Centralbl. f. Gynäk.*, Nov. 10, 1900) says that it is very important to appreciate small quantities of fluid in the abdomen before the usual diagnostic signs become manifest. During the past year he has found the following sign almost pathognomonic. With the patient in the usual lithotomy position, while the axis of the trunk is horizontal, fluid in the pelvis floats up to the uterus so that it feels as if it were on a water-bed and the abdominal and vaginal hands come less regularly together at each side of it. If now the exaggerated lithotomy position is used, with the pelvis much higher than the head, the pelvis will empty itself and its contents resume their normal palpable condition.

Influenza Simulating Whooping-Cough.—The characteristics of this, writes F. Forchheimer (*Archives of Pediatrics*, Nov., 1900) are the fever, its epidemic and contagious nature irrespective of age, and the association with respiratory or gastro-intestinal symptoms. The cough is followed by a whoop, occurs mostly at night but to some extent in the daytime, and is not accompanied by the blue color of the mucous membrane and tongue of pertussis. Ulcers on the tongue and frenulum are not uncommon. In four of the author's cases typical influenza pneumonia developed, in many there was persistent croup, in several edema of the glottis, and in three meningitis. Former attacks of true pertussis or of this pseudowhooping-cough do not confer immunity. The author's treatment consists of quinine in dose of not less than one decigram less than the age in years, and one centigram less than the age in months. When the cough has developed thoroughly, phenacetin or antipyrin gives relief, codeine keeps down the cough, and chloral secures sleep. Belladonna usually disappoints, but at times its effects are gratifying.

Toxicity of Hospital Air.—R. Binaghi (*La Rifor. Med.*, Nos. 219, 220, 1900) gives the result of his experiments in the study of the atmosphere of the hospital and its relation to wound infection. Acting on the theory that a relation might be found to exist between meteorologic factors and the number of germs in the air, analyses were made of the air of the operating-room, wards and dispensary at frequent intervals from November to June, the variations in temperature and pressure of the atmosphere at the time being noted. Petri dishes with glycerin-agar were exposed to the air of the room to be examined at different distances from the floor and for definite length of time; after proper cultivation, solutions of the colonies, in sterile water, were made and injected into the jugular vein of rabbits for tests and for control tests; of fifty-two rabbits inoculated, thirty-one died (59.8 per cent.), thirteen or these deaths being from staphylococcus infection. It was observed that the greatest impurity of the air was found in the dispensary, next in the private corridor, next in the wards, and, lastly, in the operating-room, giving a mortality respectively of forty, thirty, twenty-five, and fifteen per cent.; *i. e.*, the air of the dispensary contained the most staphylococci, while the air of the operating-room contained the least of these germs. The blood of the animals thus killed by inoculation was found to contain in addition to the staphylococci, the bacillus pyogenes fetidus; the bacillus coli; the bacillus typhi similis; the diplococcus of Fraenkel, and the bacillus mucosus. His conclusions are: (1) Staphylococci are the germs most frequently found in hospital air. (2) Their number varies and depends upon the number of people coming into and going out of the room. (3) The influence of temperature and of atmospheric pressure cannot be definitely stated, but the author's investigations proved that the germs were more frequent in the presence of high temperatures and pressures. (4) There would seem to be much justification for the idea of wound infection from atmospheric air, hence the importance of plenty of light and air in hospitals, especially in the operating-rooms, and the advisability of having as few people present at an operation as possible.

Rubber Gloves.—Baron Küster (*Archiv. f. klin. Chir.*, Bd. 62, Hft. 2) states that far from offering adequate protection against wound infection gloves really invite it by complicating the operative machinery and adding another possible source of error. Thorough and conscientious disinfection of the hands by methods which will naturally improve with time is not only simple, but in the long run more efficient.

A Simple Leg-Holder.—J. Kalabin describes a simple device, applicable to any ordinary four-leg table and in any household for examinations,

treatment and operation (*Centralbl. f. Gynäk.*, Nov. 17, 1900). The patient is placed upon any table so that the buttocks come just beyond one end. With towels or sheets tied together to form a rope, the lower extremities, held in universal flexion by an assistant, are maintained so by fastening the rope first to one leg of the table at the patient's head, passing it directly to the thigh, of that side and about it once just above the knee, thence across to the opposite side where the other thigh is secured in the same manner and the rope finally tied to the other leg of the table at the woman's head. The distance between the thighs and the flexion of the thighs on the abdomen are easily variable. The simplicity and readiness of this means commend it. The writer has given it long trial with entire satisfaction.

Menstrual Condition of Average Girl.—In order to determine in what degree normal menstruation exists among ordinary American girls of to-day, an investigation has recently been made by G. J. Engelmann (*N. Y. Med. Jour.*, Dec. 8, 1900) inquiring into the peculiarities of this function as it exists in 5000 girls between fifteen and twenty-six years of age who attend high or normal schools or colleges or are employed in department stores. It was found that it recurred with regularity in not more than 50 per cent. and that it appeared every 28 days in only 30 per cent. of cases. Irregularity increases distinctly with mental strain or physical exertion, the former tending to shorten the intervals, the latter to prolong it. The average frequency in one freshman class was 36.75 days, a prolongation probably due to change of habits. The average duration was 4.6 days, varying from 2 to 7 days. Suffering is present in from 50 to 80 per cent., being less among the college girls than those occupied in stores. Among saleswomen who stand 91 per cent. are afflicted with pain during this epoch and a large percentage are at least partially incapacitated for work.

Lupus and Roentgen-Rays.—W. A. Pusey (*Jour. Am. Med. Assoc.*, Dec. 8, 1900) reports a case of lupus in a woman, thirty-eight years of age, in which a cure was brought about by the use of Roentgen rays. The disease involved all of the lower face on the left side, the chin, and the right face below the angle of the mouth. The ulcers were typical, and the scars were sufficiently rigid to interfere with motion. Tubercle bacilli were found in a section made from a piece of tissue taken from the border of one of the ulcers. The case was clearly one of lupus, not a scrofuloderma. The treatment consisted in repeated exposure of the diseased parts to X-rays. The treatment had to be discontinued several times because of a beginning dermatitis from the rays. At first the treatments were given daily, later with occasional intermissions of three to four days. The length of each exposure was from five to fifteen minutes, and the distance of the tube from the surface varied from 15 to 5 cm. Adjacent surfaces were protected by lead masks. After a little more than three months of this treatment the parts were entirely healed. The writer says that only time can say whether it is a complete cure or not. He calls attention especially to the short exposures required, and the short course of the treatment with X-rays, as compared with the treatment by Finsen's ultraviolet light which requires exposures of an hour each, and a course of treatment lasting a year or two. In this treatment of lupus by Roentgen rays Pusey used no aids except wiping off very unclean ulcers, while Finsen resorted to pyrogallic acid, curetting, and other local adjuvants to treatment. While this method of treatment of lupus by X-rays has been in use in Germany for three years, Pusey says this case is only the third reported in this country.

Diphtheria Antitoxin.—The efficacy of using the antitoxin of diphtheria is again questioned by J. E. Herman (*N. Y. Med. Jour.*, Dec. 8, 1900) who dissects some of the statistics on the subject to show that the apparent decrease in mortality is the result of other causes. The discovery of the bacillus of Klebs-Löffler and the inclusion among the cases of diphtheria of many patients who previously would have been considered as simple "sore throats" rapidly increased the number of reported victims and consequently would have lowered the death-rate. The appearance of the antitoxin at about the same time received undue credit for the apparently beneficial result. Furthermore, the death-rate from diphtheria has for a long time shown an increase extending over many years and then a gradual decline. The introduction of antitoxin happily appeared when the death-rate was at the apex of its ascent in this country. In most of the large cities of England the rate of mortality has increased since the introduction of this remedy, so that the author is inclined to believe that the laurels placed upon antitoxin have been to a great extent unmerited.

Abdominal Hysterectomy.—Robert Sorel (*Gazette de Gynecol.*, Nov. 1, 1900) makes the following points as to this method of removing the uterus: (1) Anatomical considerations show that the cancerous focus beginning in the uterus alone spreads very rapidly to the next adjoining tissues, *i. e.*, vagina, broad ligaments, ovaries, and lymphatic glands, often in a most precocious manner, so that it is quite impossible to diagnose when such invasion has begun. (2) Therefore an operation which purposes radical cure must aim at ablating all these tissues, even including the lymph-glands. (3) Manifestly the only means of doing this well, even theoretically, is by the abdominal route. (4) Since it is not possible to remove *all the* lymphatics, the operation should be practically contra-indicated if more than the uterus is diseased. (5) In order to establish good statistics of this operation some such basis of comparison must be established and even microscopical examination of the uterus and of its lymphatics must be made.

THERAPEUTIC HINTS.

Prophylaxis in Typhoid.—To prevent the disease, writes Delafield, the feces should be received into a vessel and thoroughly mixed with a disinfecting fluid before being emptied into the common receptacle. All soiled clothes are to be soaked in a similar solution. Good disinfectants are:

℞ Mercuric bichlorid..... 8.0 (ʒ ij)
Ac. hydrochlor..... 40.0 (ʒ x)
Aquæ .....4 liters (gal. j)
Or
Mercuric bichlorid..... 8.0 (ʒ ij)
Potass. permangan..... 8.0 (ʒ ij)
Aquæ .....4 liters (gal. j)
Or
Chloride of lime..... 15.0 (ʒ iv)
Water .....4 liters (gal. j)

Mucous Diarrhea.—Often in the milder forms a mustard plaster or other counterirritant to the abdomen is all that is needed, but more frequently it must be followed by tonics and astringents such as:

℞ Argent. nitrat..... 0.13 (gr. ij)
Ext. hyoscyami..... 0.3 (gr. v)
M. ft. in pil. No. X. Sig., one three times a day.
Or
℞ Plumbi acet.....
Ext. opii.....aa. 0.13 (gr. ij)
M. ft. in pil. No. X. Sig., one three times a day.

Constant tendency to relapse demands secretory stimulants, as:

℞ Acid. nitric. dil..... 4.0 (ʒ j)
Tr. cardam. comp..... 60.0 (ʒ ij)
Tr. gentian. comp..... 60.0 (ʒ ij)
Sig., dessertspoonful every four hours.

If the pills above-named fail to check the diarrhea, the following may be used, but not to stop the movements completely:

℞ Acid. sulph. arom..... 6.0 (ʒ iss)
Spt. chlorof..... 8.0 (ʒ ij)
Tinct. opii camph..... 60.0 (ʒ ij)
Syr. zingiber.....120.0 (ʒ iv)
Sig., dessertspoonful every two hours.
Or
℞ Tinct. kino..... 30.0 (ʒ j)
Tinct. catechu comp..... 30.0 (ʒ j)
Mixt. cretæ..... 90.0 (ʒ iij)
Aq. cinnamomi....q. s. ad. 180.0 (ʒ vj)
—*Hare in Practical Therapeutics.*

Renal Colic.—An alkaline diuretic and genito-urinary sedative is:

℞ Potass. citrat..... 2.0 (gr. xxx)
Tinct. hyoscyam..... 4.0 (ʒ j)
Aquæ .....q. s. ad 30.0 (ʒ j)

Every six hours between meals after the acute attack is over. This to be supplemented by copious draughts of hot water until microscopic evidences of blood and gravel have disappeared from the urine. The loins and abdomen are kept dry and warm with a flannel roller. Constipation is relieved by large warm-water or soap-suds enemata, which may follow the administration of calomel, 0.25 (gr. iv), with advantage.—*Bruce in Treatment in Practical Medicine.*

Gonorrheal Rheumatism.—Put to bed only if lower extremities are attacked, says J. R. Hayden, immobilize joints, and apply compresses wet in cold lead-and-opium wash. When the acute symptoms subside apply the Paquelin cautery, or rub in compound iodine ointment, and make firm and uniform pressure by a bandage. If then the fluid remains it may be withdrawn and the joint irrigated with mercuric bichloride, 1-5000. In the chronic stage the joints are massaged and exercised daily, and large doses of potassium iodide administered. The most important thing of all, however, in gonorrheal rheumatism is to cure the urethral lesion.—*Venereal Diseases.*

Primary Laryngeal Tuberculosis.—Surgical intervention is indicated, writes Samuel Bernheim, when the lesion is circumscribed and its extirpation can be early and thorough. Yet usually the focus is too deep and extensive when it is discovered, and resort must be had to medical treatment. In the stage of infiltration the application of carbolic or lactic acid and the inhalation from a pint of boiling water containing 8 to 15 drops of the following:

Balsam peruv..... 10.5 (ʒ iiss)
Alcohol ..... 6.0 (ʒ iss)

is to be preferred. In the ulcerative stage insufflations of morphine and iodoform and applications of iodoformized glycerin may be of use. The best remedy of all is carbolic acid, and the following may be used as spray four times a day:

℞ Acid. carbolic.... 0.30-0.60 (gr. v-x)
Aq. lauro-cerasi..20.0 (ʒ v)
Potass. bromid...30.0 (ʒ j)
Glycerin.... ....30.0 (ʒ j)
Aq. dest.....300.0 (ʒ x)

But no treatment will avail unless means are taken to increase the resisting power of the individual by food, fresh air and climate.—*Revue médicale de la Suisse Romande.*

Postpartum Hemorrhage.—Have patients on back, writes Playfair, and expel contents of uterus by a firm grasp of the hand through the abdominal wall, then gently knead for a long time. If this does not suffice, pass hand into uterus which is incited to contract, and give ergotine hypodermically. The general treatment is that for any hemorrhage. Among the most important excitors of uterine contraction is cold used intermittently by ice-bag over fundus, rectal injections of ice-water in rectum or uterus, or the ether-spray over abdomen. Injections of hot water with a few drops of creolin are valuable, and if nothing else will do, the uterus must be plugged with iodoform gauze. Penrose recommends vinegar. Sometimes the bleeding is from the cervix, and can be stopped by a perchloride of iron swab.—*System of Midwifery.*

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AGGLUTINATION DIAGNOSIS OF TUBERCULOSIS.

WITH the advance in the treatment of tuberculosis an accurate method of very early diagnosis of the disease has become even more than ever one of the great desiderata of modern medicine. The thermometer has done much to reveal the presence of latent tubercle, the Röntgen rays have been of distinct use in institutions, Litten's diaphragm phenomenon has proved helpful to those who have opportunities for exact investigation. The problem of early diagnosis is so important that conservative clinicians still think themselves justified, despite its bad repute, in having recourse to the tuberculin test. But the profession is looking eagerly for some new discovery in this matter, and the further investigation of the possibilities of serum diagnosis for tuberculosis as proposed by Arloing of Lyons seems eminently desirable.

Although the tubercle bacillus is a strictly non-motile organism, Arloing has found that when the blood of a tuberculous patient, in a dilution of about one to ten, is added to a homogeneous liquid culture of the organism, a clumping takes place which is analogous to that which occurs in the Widal test for typhoid fever. The best culture medium for the purpose is glycerinated beef-broth. In animals, this test has, in its inventor's hands, never failed to reveal the presence of tuberculosis, however latent, and has never proved positive in a non-tuberculous case, except once, when one of the forms of pseudotuberculosis without demonstrable tubercle bacilli was found at autopsy. In human beings in 192 cases of clinical tuberculosis the test was positive in about 88 per cent. of the observations. In 130 patients suffering from diseases other than tuberculosis the test was positive in 34 per cent. of the cases. In supposedly healthy persons a positive reaction was obtained in about 27 per cent. of the observations.

That tuberculosis is often latent is well known. Thoracic glands frequently contain tubercle bacilli which lie dormant for years. Whether these cases will render the value of the test nugatory remains to be investigated, but if any clinical suspicions of the presence of tubercle have been aroused it is certainly well to know that there are living tubercle bacilli within the body, even though they may not at the moment be giving rise to any inflammatory process.

The test fails in advanced tuberculous cases only when the disease is progressing rapidly and very little resistive reaction against the invasion of the disease is evident.

It is still a matter of dispute whether the Widal reaction of typhoid fever is a manifestation of infection or resistance. The fact that in cases of typhoid fever, in which the occurrence of the Widal action is delayed, a marked tendency to subsequent relapse has been noted would seem to indicate that the agglutination of the typhoid bacilli is due to the presence of immunifying principles in the blood. The absence of Arloing's reaction in advancing tuberculosis would seem to point to a similar conclusion and demonstrate at the same time the essential identity of the two reactions.

In certain recent cases in France serum diagnosis has rendered possible the differentiation of typhoid fever and generalized tuberculosis, the Widal test proving negative, Arloing's test positive and the autopsy substantiating the conclusion. Blumenthal of Leyden's clinic in Berlin reported at the recent International Congress that the serum diagnostic reaction was of use also in differentiating the character of serous effusions into the various body cavities. In tuberculous peritonitis he has found the reaction to occur very distinctly and to give trustworthy evidence. As the Widal test has made this type of

diagnosis comparatively well known, and as it puts patient and physician to such little inconvenience, it seems eminently advisable that further investigations should be made. This is all the more important because it is especially in latent tuberculosis with good resistance, that is, in the initial stage of the disease as it ordinarily occurs, that Arloing's test promises to give significant information.

THE SAVING GRACE.

A physician, more than any other man, needs to cultivate a margin to his thoughts; or a sort of mental penumbra to which he can assign all facts that are neither black nor white, all conditions that cannot be classified as of either light or darkness.

The young physician begins his work with a mind that is keen to fact and intolerant of vagary. The conscientious physician is all for honesty and faithful work, and cannot bear the ingratiating qualities of the quack. Therefore it is something of a surprise to every self-respecting man to find that the accurate, thorough mental equipment and skill that he has striven so hard to acquire is almost wholly unappreciated by his *clientèle,* and that his success as a practitioner depends on something quite different, a something that the quack, the Christian Scientist, and the herb-doctor alike possess, the ability to recognize and cope with the ignorance and superstition around him.

We will grant that the average well-educated, honest medical man has a bright and shining sphere of influence in a society that represents outer darkness concerning matters of science. The best plane on which the two can mingle to their mutual advantage is in a realm of half light. In other words, before a physician can expect his patients to appreciate his point of view on matters of health, he must make a careful study of their point of view. And what is more, if he is to accomplish anything he must accept their point of view and dim the image of his own perceptions by trying to grasp facts from the standpoint of ignorance.

In an address by Geo. F. Sydenham, on the Vulgar Errors and Superstitions of West Somersetshire and their Relation to Medicine, published recently in the *British Medical Journal,* he sets forth a host of hard, inherited ideas that a general practitioner must assimilate before he can practise successfully in certain parts of the enlightened island.

In West Somersetshire, to the medical idiosyncrasies of which he confines himself, the graduate of a London medical school must accept his place along with the herbalist, the white witch, and the "seventh son" doctor who cures by the laying on of hands on a Sunday morning, both patient and doctor having fasted from the previous night. One man, the seventh son of a seventh son, told this physician that as a boy he never had had a meal on Sunday, as his parents derived a good income by starving him into the proper condition for miraculous cures.

The physician in West Somerset must invariably order the placenta burnt, as the number of times it crackles will foretell the number of children to be born; he must wrap the umbilical cord in burnt rag, although he does not know why, and must submit to having his patient's labor facilitated by the holding of the pepper-pot to her nose. Thorns and inflammation, he learns, are especially susceptible to prayer, which must never be considered superfluous, even after the physician has used his lancet; and he is a wise man who recommends it as far less objectionable in the treatment of hemorrhage and burns than the application of cobwebs and tobacco. When it comes to curing goiter by the touch of a corpse and reducing a hernia by crawling downstairs head first, one feels inclined to pity that man whose rounds take him over the West Somerset moors.

And yet many physicians of this country might collect as varied a list of superstitions even among well-to-do patients; vagaries of diet, of bathing, of clothing, superstitions in which trust in Providence takes the place of hygiene, and prayer serves equally as well as a disinfectant. Personal idiosyncrasies regarding climate; beliefs concerning the nature and cause of ailments that the patient does not possess; to say nothing of the passion for patent medicines; the exalted fervor of Christian Scientists; the calm pity of Theosophists, and the enthusiasm of Vegetarians; all these the physician must continually respect, if he is to be respected.

But what element must he infuse into that mental margin of his make-up, to be all things to all men, and yet be himself an honest man? We advocate the saving grace of humor; that keen appreciation of the ridiculous that never intimates how ridiculous it is, that quiet perception of the grotesque that makes no sign, and that wide interest in men that takes in all their peccadillos, and cranky ideas and intolerances,

without giving evidence of any in return. It is this grace of humor that has saved many a situation. And when we are ever particularly depressed by the inability to make headway against superstition and indifference, we pray for that fine mingling of tact and fact that Sir James Y. Simpson showed when he was violently reviled by the Scotch clergy for using chloroform to relieve the pains of childbirth. Their opposition was based upon the primeval curse, "In sorrow shalt thou bring forth children." Simpson gently reminded them that the first operation recorded in history was performed under anesthesia, since, when God created Eve from one of Adam's ribs, he "caused a deep sleep to fall upon Adam."

PREVALENCE OF OBESITY.

It is positively amazing to see how fat the well-to-do people of New York are growing. We might soften the term, and refer to "unusual abdominal development" and a "tendency to obesity," but we agree with Mr. Gilbert in his satire in the "East India Merchant," wherein he says:

"Upon my word it seems to me
Unpardonable vanity
And worse than that
To call your fat
An adipose deposit."

A series of impartial counts made in the most representative streets, theaters and public conveyances of New York, revealed the fact that among people otherwise normally developed, there is a remarkable proportion with large and protuberant abdomens. There were in a first count of one thousand persons from about twenty years of age upward 281 or over 28 per cent. thus afflicted. In a further series of one hundred taken in the less prosperous eastern district, the percentage was as low as 14, while in another series of 200 counted on the most representative street, Broadway, there were 71 persons with excessively developed abdomens, a percentage of over 35. In the corridors of one of the high-class residential hotels the number of similarly abnormal individuals in a total of 100 was 70, while in a poorer class hotel the proportion was the lowest seen anywhere, namely, 11 in 100. Altogether in a random count on 1500 persons of adult life 447 were decidedly deformed, giving an average of 29.8 per cent.

In applying the discriminating eye to these unsuspecting persons who innocently furnished these statistics, there was no attempt to compare them with the Belvidere standard. Although the normal waist-line should be less than that of the chest, and the abdomen in a straight line with it, yet it has not been forgotten that health and vigor go hand in hand in this climate with a certain amount of fat; and as long as the symmetry of figure was preserved, and the abdomen not startlingly protuberant, the plump and well-nourished were included among the normal. Therefore from this conservative standpoint the rather startling statement may be made that in the American adult, as typified by the New York man, for the men showed this tendency rather more than the women, the undue development of the abdomen is a menace to the physical health of the race.

The cause of this condition, so insidious in its outset, must be sought for in a disturbance of the balance of nutrition. Either overeating alone or overeating combined with insufficiency of exercise is to be regarded as the prime factor in bringing it about. In the metropolis success or a modicum of success means three hearty meals a day, and in very many cases an evening supper thrown in. This of itself would probably produce corpulence, but when there is added to this overfed condition a state of absolute muscular laziness that is bound to increase with a man's success, it is difficult to see a limit to his obesity.

The natural development of the means of transportation has gradually but surely brought about the condition that the most prosperous men live farthest from their business. Not many years ago the majority of persons walked to and from business if the distance was not too great, the horse-cars and busses being altogether inadequate. Later came the elevated railroad permitting of great city development, but distinctly curtailing regular exercise, which became now with business people largely limited to the walk to and from stations. Even that was for many abolished by the advent of the electric cars whose further opportunities for physical repose were readily accepted even at the expense of time.

Not only in travel, but also in domestic and household work, the tendency is to favor the physical being. In the ordinary two- or three-story house of a generation ago, the housewife ran up and downstairs many times a day. In the present era of apartment-houses, the long flights of stairs make the members of the family

more economic of their physical effort, and the cramped quarters of a flat give but little opportunity for exercise in domestic duties; while the wealthy, who live in large apartments and family hotels as well as many in their own huge dwellings, depend entirely on elevators.

The same tendency toward laziness is seen in the distinct diminution of exercise in sports. The middle-aged have derived much benefit from bicycling in recent years, but there is now a noticeable falling off in this respect. Indiscriminate use of the bicycle probably harmed many and has left not a few damaged hearts, but the exercise moderately taken undoubtedly helped to retard the tendency toward fat accumulation. Now the wealthy man has his automobile, and the less wealthy man takes a trolley ride into the country. Golf, the present fad, is too deliberate in its movement to rank with the bicycle as a preventor of adiposity. Moreover it will never become the game of the wage-earner, as it can be played only in the daytime.

Aside from actual interference with the heart from overlying fat, we must consider the extra amount of work necessarily placed upon that organ in maintaining circulation and its increased liability to muscle weakness.

The tendency to grow stout is generally treated as a subject for levity, but when adiposity becomes excessive, especially in the abdomen, it is a pathological condition, for the accumulation of fat there marks the onset of physical decay.

As long as the present trend toward physical inertia exists, we see but small chance of betterment; that which is accomplished must be done along individual lines. The recent fashion among many Wall Street men of walking to and from business is to be highly commended. A more active life is the only radical treatment. It should become a custom with all to find the time for several miles of brisk walking daily. If common sense will not develop the custom it must be developed as a fad; or we shall soon find our prosperous American citizen figuring in the comic papers with abdomen like a Dutch uncle, and, what is more to the point, we shall have a shorter life-limit, and a flabby, degenerate muscleless race of men in our large cities.

Smallpox in New York.—As indicated in last week's Medical News, smallpox cases continue to be reported nearly every day. It is probable that the disease will be present in New York throughout the winter. The vaccinations are progressing rapidly.

ECHOES AND NEWS.

NEW YORK.

President of Lunacy Commission.—Rumors of a change in the personnel of the Lunacy Commission are about. The President of the Lunacy Commission must be a physician of ten years' general experience and of five years of special experience in the treatment of the insane. It is believed that a physician connected with one of the State hospitals for the insane will be appointed.

Presbyterian Hospital Thirty-Two Years Old.—The thirty-second anniversary of the Presbyterian Hospital was celebrated last week in the dispensary of the hospital. The hospital was open for public inspection between 1:30 and 6:00 P. M., and nurses in uniform were ready to conduct people through the building. The anniversary services were held at 3 o'clock and about a hundred persons were present, including all the officers and fourteen of the managers. The address was delivered by the Rev. Dr. Purves. He gave a general outline of the work done by the hospital.

Health Board Presidency.—One of the changes proposed by the Charter Commission removes the provision which now prevents the President of the Board of Health of New York City from being a physician. The new provision does away with the Board as it now exists, and provides for the appointment of one Commissioner, who *may*, or *may not be* a physician, by the Mayor, the appointee to act with the Police Commissioner and the Health Officer of the Port.

Vaccination of Brooklyn Police.—Early vaccination of a general character in the ranks of the Brooklyn police is likely, according to Dr. A. W. Ford, a member of the Borough Health Board. Dr. Ford says that there is considerable apprehension among medical men of a possible outbreak of smallpox in Brooklyn.

Claims of Christian Science.—It was recently claimed by a healer before one of the New York Courts that Christian Science can cure cancer, smallpox, consumption—in fact all diseases.

New Hospitals Needed.—At the annual meeting of the State Charities Aid Association, held in this city last week, it was declared that these additions to the Department of Public Charities were urgently needed. A new Harlem hospital, a separate hospital for phthisis cases, a convalescent hospital, a small municipal lodging-house for women and children, and three nurses' homes, one at the City Hospital, another on Randall's Island and a third at the Almshouse.

Obituary.—Dr. Leroy J. Brooks, for more than twenty-five years one of the leading physicians of Chenango County, N. Y., died last week from uremic poisoning resulting from Bright's disease. He was a member of the county, State and National medical societies, and was widely known.

Dr. Adolf Pramann, one of the oldest practi-

tioners in this city, and well known for his charities, died at his residence, No. 251 East Eighty-sixth Street, on Tuesday, December 11th, from a complication of diseases, leaving a widow, but no children. He was graduated from the University of Würzburg in 1856, and for ten years served as surgeon on the steamers of the North German Lloyd line.

Dr. George H. Elliott, of New York, died at the home of his father, William H. Elliott, in Manchester, N. H., on the 17th inst. He was fifty-five years old and a graduate of Denver Medical College. He served in the Civil War with the Seventh New Hampshire Regiment. He was a member of Hope Lodge, F. and A. M., of New York; honorary member of the Lambs Club, and a member of New York and Denver medical societies. He was also a Commissioner of Lunacy in New York.

Dr. John C. Acheson died at his residence, No. 220 East Seventeenth Street, last week from heart disease, after an illness of six weeks. He was born in this city on October 17, 1832, and was one of the oldest graduates of the University of the City of New York, his class being that of 1853. His brother, Joseph, was the first graduate of the University, class of 1833, and his father was one of the founders. He was graduated from the College of Physicians and Surgeons in 1859, and was one of the first physicians to be employed by the city when the Board of Health was established. He was a charter member of the Zeta Psi and a member of the County Medical Society. Two sons survive him, J. Charles and Harold Stuart Acheson.

Typhoid in Sing Sing Prison.—Warden Johnson announced last week that typhoid had broken out among the convicts in Sing Sing prison. There are now over twenty patients with typhoid in the prison hospital, and additional cases are developing daily. Dr. Irvine, the prison physician, recently held a conference with Warden Johnson, when it was decided to fit up an additional building as an emergency hospital. A wing in the new State building will be used for this purpose. The supply of water to the prison comes from the Croton reservoir, and the water before it is consumed in the prison is boiled.

New Lying-in Hospital.—J. P. Morgan's gift to the Society of the Lying-in Hospital, the fine new building now nearly completed on the north side of Stuyvesant Square, is fully described in the annual report of the Society, made public last week. The basement will be devoted to the outdoor work; the first story to the executive offices, the second to the nurses' department, the third to the septic department, and the fourth, fifth, and sixth stories to wards for patients, containing about 200 beds. The seventh story contains the operating-room, laboratory, kitchen, and laundry, while the eighth story is a continuation of the laboratory, with additional amphitheater seats for the operating-room. The births in this borough are 150 per day, but there are only two hospitals on Blackwell's Island maintaining wards where cases of childbirth are received, and the Emergency Hospital in East Twenty-sixth Street, between Second and Third Avenues, contains only thirteen beds, making, according to the report, a total accommodation at the disposal of the city of sixty-eight beds for waiting women and fifty-six beds for women in childbirth. During the year past the Society, in its present quarters, had 3018 applicants for medical treatment, and cared for 2162; out of this total there were only eight deaths. The average wages received by the husbands of the women treated was $29.84 per month, and the average rent paid $8.53, leaving a balance of about 70 cents per diem on which to support and clothe each family.

Scientific Optics.—Scientific workers the world over have long been familiar with the remarkable results accomplished in the field of applied optics by the genius and industry of Prof. Ernest Abbe of Jena, which have carried that science to more important conclusions than have been reached before and which have developed the great optical works at Jena, thus uniting the theories of the pure scientist with the practical details of modern methods of manufacture. The endorsement which the University of Jena gave to Prof. Abbe's early endeavors has brought great benefits to the University itself and has opened a new field of scientific activity in encouraging trained men to devote themselves to purely scientific problems and to their practical solution. In America, notwithstanding the rapid extension of scientific research, the higher optical field has not seen a corresponding development, for, although there have been large commercial undertakings, they have not shown the tendency to develop along the lines which have been so noteworthy abroad. With the death of the late Herbert R. Spencer the last of the three great American workers in applied optics passed away and as yet no trained American scientists have come forward to supply their places. It is of general scientific interest to note the arrival in this country of one of the trained coworkers with Prof. Abbe at the Zeiss establishment, Hermann Kellner, Ph.D., who has already entered upon his duties as scientific director for the Spencer Lens Company of Buffalo, N. Y. Here he will continue his scientific researches, with especial reference to microscope and telescope objectives. The attempt to establish under American conditions a scientific institution in Buffalo similar in methods to that at Jena will unquestionably be watched with great interest by American scientists.

New York State Hospital for the Care of Crippled and Deformed Children.—This institution, incorporated by the last Legislature, is now open for the reception and treatment of patients. The Hospital is located at Tarrytown, N. Y., at Paulding Avenue and the Hudson River, about a mile south of the railroad station. It has accommodations for about thirty patients. The Board of Managers appointed by Governor

Roosevelt are the Right Rev. Henry C. Potter, Bishop of New York, President; George Blagden, Jr., Secretary and Treasurer; J. Hampden Robb, J. Adriance Bush and Dr. Newton M. Shaffer. The Hospital was established "for the care and treatment of any indigent children who may have resided in the State of New York for a period of not less than one year, who are crippled or deformed, or who are suffering from a disease from which they are likely to become deformed." The following conditions are imposed upon all applicants: "No patients shall be received except upon satisfactory proof made to the surgeon-in-chief by the next of kin, guardian, or a State, town or county officer, under the rules to be established by the Board of Managers, showing that the patient is unable to pay for private treatment. Such proof shall be by affidavit. If there was an attending physician before the patient entered the Hospital, it shall be accompanied by the certificate of such physician giving the previous history and condition of the patient." Patients from three to fifteen years of age will be received for treatment, and all applications will be acted upon in the order of their reception. No patient will be admitted without an examination by and a certificate from the surgeon-in-chief or his assistants. No patient whose condition is such that death is likely to occur in the immediate future, or whose condition precludes a reasonable amount of relief as the result of treatment, will be admitted. Application for admission should be made to Dr. Newton M. Shaffer, Surgeon-in-Chief, No. 28 East 38th Street, New York, who will appoint a time and place for the examination of the patient. Patients living at remote points in the State are referred to the following gentlemen, out of town members of the Consulting Staff: Dr. A. Vanderveer and Dr. S. B. Ward of Albany, N. Y.; Dr. Louis A. Weigel, Rochester, N. Y.; Dr. Roswell Park and Dr. Charles G. Stockton, Buffalo, N. Y., and Dr. Richard B. Coutant, Tarrytown, N. Y.

PHILADELPHIA.

State Medical Examination.—The following is the result of the last annual examination by the State Board of Medical Examiners:

College.	Number examined.	Number failed.
University of Pennsylvania	121	2
Jefferson Medical College	38	4
Medico-Chirurgical College	20	4
Western Penn. Medical College	67	9
Woman's Medical, Phila.	16	0
Baltimore Medical College	12	5
Baltimore University	5	4
Maryland Medical College	4	3
University of Maryland	3	0
Physicians & Surgeons, Baltimore.	3	2
Miscellaneous	38	8

Suit for Maintenance of Indigent Insane.—A novel question of fact has been raised in the suit brought against this city by the trustees of the State Hospital for the Insane at Norristown. The suit is based upon a claim of $52,000, an unpaid balance for the care of indigent insane persons during 1896-97. The charge was $2.00 per person previous to 1899, when it was changed to $1.75. The defence of the city is that while $2.00 was paid during the years named, the actual cost of maintenance, according to the reports of the asylum, averaged $1.90 or less. This difference it is claimed will equal the sum demanded by the hospital. This raises the question as to whether claims based upon overcharges are to be admitted.

Free Hospital for Poor Consumptives.—This organization is now supporting 45 patients in city hospitals and in the Adirondacks. The managers have an opportunity to secure both a city home and a mountain site for a sanatorium at a cost of $10,000, and are endeavoring to raise this amount before January 1st. More than $1500 has already been subscribed. The President, Dr. Lawrence F. Flick, states that since 1884 there has been a steady decrease in the death-rate from consumption in Philadelphia, amounting in all to 33 per cent., and that under the most recent methods of treating this disease 75 per cent. of those in the first stage and 40 per cent. of other cases can be cured.

State Forests as Health Resorts.—Dr. J. T. Rothrock, General Secretary of the Pennsylvania Forestry Association, states in his annual report that "the condition of the forestry movement was never as strong as at present. The State is now in actual possession of more than 100,000 acres of land and is only second to New York. The Pennsylvania Forestry Association has been for years so intimately related to the State Board of Health that we have almost come to regard our work as part of a whole rather than two distinct things. We believe the sanitary influences of either the Hopkins reservation or the smaller one in Pike County are in all respects equal to those of the Adirondack region. We ask the cooperation of the State Board of Health in making known these facts and in enabling us to turn them to practical use in the treatment of our citizens who may be suffering with bronchial or pulmonary troubles. The Forestry Commission in the selection of land for the State reservation have constantly had in mind the possible usefulness of the ground as a source of supply of pure water for our towns and cities." Dr. Rothrock believes that trained foresters should be employed and that there should be a warden for each 5000 acres of land owned by the State.

Pennsylvania Hospital Clinics; Operative Treatment for Cirrhosis of the Liver; Chorea.—Two interesting cases were reported December 12th, post-mortem specimens from one being shown by Dr. A. V. Meigs. Drs. F. A. Packard and R. G. Le Conte spoke of the medical and surgical aspects of the cases. Both cases were operated upon early in October by Dr. Le Conte,

adhesions of the liver and spleen to the diaphragm and of the omentum to the liver and parietal peritoneum being caused by irritating the surfaces with gauze. One patient died within five days of uremia. The other, a man, sixty-three years of age, lived until December 6th. Dr. Packard considered this case a typical one for operative intervention for two reasons: First, the ascites was pronounced, tapping being necessary at increasingly-frequent intervals; second, there was no evidence of relief by the systemic circulation, the veins of the abdominal wall not showing enlargement. The operation, *per se,* was a success, four very large distended veins appearing on the abdomen after a time and the ascites being practically eliminated; but the patient developed typical symptoms of a toxemia of internal origin and finally died. The post-mortem showed a cirrhotic liver and adhesions as stated. Dr. Packard said that operative treatment in these cases offers but little hope of effecting a cure. Toxemia is almost sure to develop sooner or later when the portal circulation is diverted. All the organs of the body are in poor condition in these subjects and do not bear well the operation or the changed circulation. Cases should not be reported as cured within a few weeks or even a few months after operation, as the toxemia may be of slow progress.

Dr. J. C. Wilson recently showed a child suffering from chorea, who had been treated in the hospital one year previously for the same disease. At that time this case and another child having the same affection were in adjoining beds. One was given Fowler's solution, the other compound tincture of cardamom, the rate of recovery being about equal in both cases. The child which was given arsenic has returned, the other so far as is known having had no recurrence. Tincture of cardamom is now being used. Dr. Wilson mentioned these cases as showing that rest in bed is probably of more value than medication.

County Medical Society; Lymphatic and Portal Infections Following Appendicitis.—At the meeting of December 12th, Dr. John C. Munro, Surgeon to the Boston City Hospital, by invitation read a paper upon the above subject. Dr. Munro has met with an unusually large number of cases of infection following appendicitis, his paper embodying the report of many of these cases. The subject is of great interest and importance to the general practitioner, as well as to the surgeon. As the cases of appendicitis that come under the care of Dr. Munro are carefully studied, they constantly add to the evidence of lymphatic and portal involvement due to this disease, the symptoms being chills, tenderness, spasm of muscles, jaundice, etc. Clinically, the involvement is generally retroperitoneal and when openings are made in such cases of lymphatic infection, inflammation and pus are found. The process may lie dormant for a long time, one case developing pain, tenderness, spasm of muscles, etc., eighteen months after an attack of appendicitis. These infections may subside under medical treatment, but it is much better to evacuate the pus. An exaggerated febrile movement before operation, or its persistence afterward, suggests lymphatic involvement. Some of the conclusions reached by Dr. Munro after a study of the cases reported are: (1) Portal infections are by no means rare and are not positively fatal; their severity does not depend upon the degree of appendicular involvement; (2) the process may be a chronic one; (3) lymphatic ones are more common than portal infections; (4) mild cases of both may yield to medical treatment; (5) spasm and tenderness of the posterior muscles, as the quadratus, lumborum, point to retroperitoneal infection; (6) drainage affords satisfactory relief; (7) free incision, especially in portal infections, is always better than aspiration.

Dr. H. A. Hare spoke of the anatomy of the appendicular region and of the favorable circumstances thus afforded for a spread of infection by both blood-vessels and lymphatics. Cases were cited in which chronic colitis was due to irritation of the bowel by appendicular discharges. Also other cases presenting gastric symptoms, such as pain soon after eating, etc., which had been diagnosed as gastric ulcer and finally proven to be infectious from pus in the appendix.

Dr. John G. Clark spoke of experiments which he has conducted with regard to the lymphatics of the peritoneum. Carmine granules injected into the peritoneal cavity of rabbits were found in the circulation five hours afterward. The absorption was through the central tendon of the diaphragm into the retrosternal tissues, although the rabbits were kept upright, no absorption from other parts of the peritoneum being proven. A surprising result was the early finding of these granules in the marrow of the femur. The results would point to the advisability of thorough flushing of the abdominal cavity and leaving in a large quantity of fluid after operation.

CHICAGO.

Favor Reelection of Dr. Egan.—At a recent meeting of the Chicago Medical Society a resolution was adopted urging the reelection of Dr. James A. Egan of Springfield, Ill., as Secretary of the State Board of Health.

Appointment of Dr. Leininger.—The appointment of Dr. George Leininger as the Coroner's chief physician has been announced. He will receive a salary of $2500 a year. He succeeds Dr. E. P. Noel.

To Amend Pharmacy Law.—The Illinois Pharmaceutical Association will ask the Legislature at the coming session to repeal Section 8 of the Pharmacy Law of Illinois. This Section permits the State Board of Pharmacy to allow certain merchants in certain parts of the State to sell patent medicines. It was declared unconstitutional by the Supreme Court of Illinois. Com-

mittees have been appointed to look into the revision of the U. S. Pharmacopœia, another on legislation, a third on trade interests, and a fourth on the Board of Pharmacy records.

Memories of Children.—Investigation of children's memories by Professor F. W. Smedley, of the department of child-study in the public schools, may result in rearranging the schoolwork of the lower grades. If further investigation bears out the present conclusions, children will be taught as far as possible by sound. They will not be asked to learn by use of the eyes until they are older. After examining hundreds of children he has found that up to the age of fourteen or sixteen they remember best what they have heard. After that time sight impresses the memory more than sound. The application of the theory would relieve the eye-strain of young children. Professor Smedley's method of testing children for memory is to read them a series of figures, carrying the number as high as the memory will go. A child may repeat correctly such a number as 1,954,677 and fail if one more digit is added to it. He has found that in reading the figures children under fourteen almost always will remember a higher number than if it were shown them on a card for the same length of time. At the age of fourteen to sixteen the power of remembering through hearing begins to diminish and that of seeing to increase.

Ulcerative Endocarditis.—At a recent meeting of the Chicago Society of Internal Medicine, Dr. B. W. Sippy read a paper on this subject. Ulcerative or malignant endocarditis is in reality a general sepsis with localization of the infective process in the endocardium. It differs from verrucose or benign endocarditis chiefly in extent of pathologic changes and in severity of clinical manifestations. The disease appears either as an acute or a chronic affection. In the acute type the cardiac features may be completely obscured by the widespread localization of the infective process. In differentiating benign from malignant endocarditis the author considered the following points of great value: (1) Etiology and clinical course; (2) temperature; (3) appearance of the patient; (4) blood analysis, including bacteriological examination; (5) hemorrhages; (6) retinal changes; (7) size of spleen; (8) evidence of embolism. Under treatment, the value of prophylaxis, rest, tonics and antistreptococcic serum was considered.

C., M. & St. P. Railway Surgical Association.—This Association met at the Great Northern Hotel December 13th and 14th. Papers were read and discussed as follows: "Some Surgical Notes Gleaned in a Tour Around the World," by Dr. W. S. Caldwell, Freeport, Ill.; "First Aid to the Injured," by Dr. D. Macrae, Jr., Council Bluffs, Ia.; "Ossification or Calcification of the Eyeball," by Dr. Thomas McDavitt, St. Paul, Minn.; "Fracture of the Skull," by Dr. E. M. McDonald, Beaver Dam, Wis.; "Fracture of the Base of the Skull, with Report of Case," by Dr. D. N. Loose, Maquoketa, Ia.; "Fracture of the Jaw, with a Case," by Dr. J. H. Rockwell, Liberty, Mo.; "Fractures of the Lower End of the Radius," by Dr. Ira K. Gardner, New Hampton, Ia.; "Continuous Elastic Pressure in the Treatment of Fractured Patella," by Dr. J. H. Thornton, Lansing, Ia.; "Injuries to the Extremities," by Dr. J. N. Warren, Sioux City, Ia.; "Traumatic Hernia," by J. R. Hollowbush, Rock Island, Ill.; "The Surgical Aspect of the Ferguson Cyclone," by Dr. M. L. Allen, Tama, Ia.; "Gangrene with Cases," by Dr. E. O. Plumbe, Rock Valley, Ia., and "A Case of Brain Traumatism," by Dr. B. F. Dodson, Berlin, Wis.

New Plan for the Appointment of Internes.—The Democratic County Executive Committee recently took action toward changing the method of appointing internes in the Cook County Hospital. Applicants for such positions shall pass a competitive examination conducted by a committee of four physicians, composed of one eclectic, one homeopath and two regulars. The candidates who receive the highest marks are to get the places. The following resolutions were adopted by the Committee:

Whereas, Every two years a fierce contest has been waged for positions on the various medical staffs connected with the Cook County Hospital, and the said contests have engendered a very bitter feeling between the various medical colleges in this city; therefore, be it

Resolved, That the annual contest for positions as internes shall be open to any graduate of any medical school in Cook County. A committee of four, composed of one eclectic, one homeopath and two regulars, the members to be chosen by the respective attending staffs, shall examine on each subject. Each committee shall examine and mark the candidates' papers jointly, and the averages of the four examiners shall constitute the mark for any given branch. The subjects included in this examination shall be the following: Anatomy, pathology, surgery, physiology, medical diagnosis, eye and ear, chemistry, gynecology, skin and venereal diseases, histology and obstetrics. The twenty-four competitors receiving the highest averages in the above branches shall be appointed internes irrespective of the school to which they may belong, and their time of service shall be regulated by the attending staffs.

The number of successful candidates from each school annually shall determine the ratio of patients to be assigned to each staff for that year; that is, if of the twenty-four successful candidates seven be eclectic, eight homeopathic and nine regular, the distribution or allotment of patients shall bear this ratio in the assigning of work to the attending staffs; that is, seven patients to the eclectic staff, eight to the homeopathic staff and nine to the regular staff.

In materia medica and therapeutics a separate examination shall be given by a committee from each of the schools for its own pupils, and the markings of these committees shall be added

to the other averages of their successful candidates in order to determine the relative positions of the competitors from each school. Therefore, be it

Resolved, by the Executive Committee of the Democratic party of Cook County, That the Democratic members of the county board be and are hereby requested to further the objects of the above resolution by every legitimate means within their power.

GENERAL.

Scarlet Fever in the Carolinas.—Scarlet fever has spread over the middle and upper Carolinas. The Board of Health has closed every church in Seneca, prohibiting gatherings of all kinds. Last week Clement College was closed on account of the prevalence of the disease.

Obituary.—Dr. W. H. Jones, United States Navy, retired, died at his home, Bethlehem, Pa., last week of diabetes, aged sixty years. He entered the navy after graduating from the University of Pennsylvania in 1861, and was retired in 1893.

Typhoid Among British Troops.—A question in the House of Commons last week elicited the statement that there had been 15,625 cases of typhoid fever among the British troops in South Africa, and that of this number, 3642 proved fatal.

Gift to Aberdeen Infirmary.—Lord Mount-Stephen (formerly President of the Canadian Pacific Railroad) has given £25,000 to the Provost of Aberdeen, for the purpose of clearing the Aberdeen Infirmary of debt.

Professor Abel Injured.—Dr. John J. Abel, Professor of Pharmacology in the Johns Hopkins University, was painfully injured on Tuesday night by an explosion. He is now confined to the Johns Hopkins Hospital and there is grave concern about his eyes.

American Medical Association Prize.—The Committee on Scientific Research of the American Medical Association desires to announce that it has available the sum of five hundred dollars for the assistance of researches to be undertaken in the next six months, and that the money will be appropriated if applications be received within the month of January, 1901. Applicants should state clearly the character of the research to be undertaken, and the facilities at their command, addressing Dr. H. C. Wood, Chairman, 1925 Chestnut Street, Philadelphia, Pa.

War on Absinthe in Paris.—The Chamber of Deputies adopted unanimously December 10th M. Vaillant's resolution calling on the Government to prohibit the manufacture and sale of all alcoholic liquors pronounced dangerous by the Academy of Medicine. The resolution is aimed at absinthe, the consumption of which has nearly doubled in France since 1894, and now stands at 10,000,000 liters (nearly 6,000,000 quarts) annually.

Smallpox in Michigan.—State Inspector Johnson, representing the State Health Board, has returned from Custer, Mason County, Mich., where a large number of alleged cases of chickenpox have developed. Every case was diagnosed by Johnson as smallpox, and a number of them are virulent. Merchants in whose homes patients are suffering have been going to and from their places of business and every one has been exposed, including many from the country. There are over 100 cases of smallpox at Custer, out of a population of only 300. Strict quarantine has been proclaimed against the village, and there is some talk of a shotgun quarantine on the part of surrounding towns.

Women's Hospital for Canada.—A movement to formulate a scheme for the maintenance, in connection with the Women's Medical College, of a Women's Hospital for Ontario, in which all the operations shall be performed by women surgeons, and the resident physicians shall also be women, is being actively developed. A number of the women doctors of Toronto say that similar hospitals are very popular in the United States, and the mortality in one, in Boston, is very low. It is proposed to get twenty-five-cent. subscriptions for the work from the women of Ontario.

Food Laws of Michigan.—Food Commissioner Grosvenor of Michigan boasts in his annual report, just received, that no State is freer from injurious adulterations of food than is Michigan, that no State has better laws on the matter, and that nowhere are such laws more energetically enforced.

News Items Concerning Third Pan-American Medical Congress.—The Organization Committee has postponed the meeting of the Third Pan-American Medical Congress until February 4, 1901. It will be held from that date until the 7th inclusive. All literature pertaining to the Congress is in Spanish, but occasional news items will be sent to the weekly journals. Delegates can go either by the land routes, which are all *via* Florida, or by the water route from New York. Full particulars concerning these routes, excepting that of the Ward Line steamer from New York, will be found in the *Journal of the American Medical Association* of November 3d. Those coming from south of Washington and west of Pittsburg will probably select the Florida route, while those from the northeast will find the Ward Line more convenient. The steamer "Seguranza" of the Ward Line leaves New York January 30th, arriving in Cuba on February 3d, the day before the beginning of the Congress. The new Ward Line steamer "Morro Castle," holding 135 cabin passengers, leaves Havana on February 9th, reaching New York February 11th. The round trip, everything included, is $60.00. Any one going *via* this route will be absent from New York twelve days. Any of the delegates going down by the Ward Line, who de-

sire it, may by a supplementary payment of $25.00 return *via* Santiago. This trip will take from ten to twelve days, during which time the passengers live on the ship, and have their meals there if they desire. The party goes from Havana by rail to Cienfuegos in one afternoon, there taking the steamer to Santiago, and from Santiago to Nassau, in the Bahamas, and from Nassau to New York. The stay in these different ports will be for a day or more. English-speaking members of the Cuban Reception Committee will meet all steamers on their arrival in Havana and escort the delegates to the hotels assigned to them. The best hotels in Havana are the Telegrafo, Mascotte, Inglaterra and Pasaje. Rates $3.00 to $5.00 a day. The Entertainment Committee, appointed by the City Council of Havana, for the purpose of making it pleasant for the delegates during their stay, have arranged a program which, although as yet not fully determined upon in every detail, is nevertheless one which adds an attractive feature to the meeting. There will be a large ball given at the Tacon Theatre. This will be under the management of a sub-committee and an auxiliary ladies committee. The Committee is sparing no pains to make the ball the great social feature of the week, and one that will be most enjoyable, not only to the delegates, but also to any ladies in their parties. (There will be a banquet given at the same place.) On another day an excursion will be made to the sugar plantation of Mr. LaCoste near Havana on three Government transports. On arriving there the delegates will be shown the manner of growing sugar-cane, gathering it, grinding, cooking and refining the sugar derived therefrom, points of interest connected with the method of making sugar, and life on a sugar estate. Refreshments will then be served, either on the estate, or on the transports returning. These transports will be so arranged for the guests as to give the greatest amount of comfort and pleasure during the trip. On another day there will be a parade of the police and an exhibition of the fire companies, in which they will show the promptness and skill with which they combat any fires taking place in the city. Receptions will also be given by various officials, and private dinners by numerous Cuban physicians to the delegates with whom they are acquainted. The three general sessions of the Congress at which papers of general interest will be presented and addresses delivered by official representatives from the different countries, will be held at the Tacon Theater in Havana. The section meetings will be held in the University on the first floor, and on the first and second floors of the Institute. The delegates from Mexico are at present in the lead, and a large number of abstracts have been received from them. Mention will here be made of the names of the presidents of the different sections, all Cubans, as the presidents are representatives of the country in which the Congress takes place, and the secretaries for the United States. All communications and titles of papers should be sent to the United States Secretary of the Section covering the subject, or to the Associate Secretary for the United States of the Congress, Dr. Ramon Guiteras, 75 West 55th Street, New York. A preliminary program will be published shortly.

CORRESPONDENCE.

ETIOLOGY OF YELLOW FEVER.

Rio Grande de Sul, December 12, 1900.

To the Editor of The Medical News:

Dear Sir:—I purpose once more to avail myself of your courtesy in asking you to publish the following lines:

In my communications on the etiology of yellow fever (made to the Academy of Medicine of Rio Janeiro at the sessions of May 6th and June 3, 1897), in connection with which I have conducted experimental investigations dating back to 1895, I have made the following statements: (1) Yellow fever is a germ disease; (2) the specific agent is found chiefly in the gastrointestinal apparatus and in the spleen; (3) the existence of the bacillus in the blood can only be demonstrated in some cases at the approach of death and post-mortem; (4) besides the fatty degeneration of the liver, which has always been recognized as one of the lesions of the disease, the nutmeg type was found in animals dying of experimental infection; (5) starting from the specific bacillus, it is possible to prepare a therapeutic serum, at once curative and prophylactic.

It is of public notoriety that my applications of serumtherapy, which were crowned with success in the hospital of S. Sebastian at Rio de Janeiro in 1896 and 1897, were made before Prof. Sanarelli had made known his *bacillus icteroides*.

Later, my experimental investigations enabled me to demonstrate that the bacillus of yellow fever is merely a form of the *bacillus coli communis* developed in special life condition.

In his publication, Sanarelli recognizes yellow-fever infection only by way of the air passages; he denies that the bacillus may be found in the gastrointestinal apparatus; he admits that the bacillus may sometimes be found in the blood of patients; he directs attention only to the ordinary fatness of the liver which he compares with that produced by phosphorus poisoning; and, finally, he presents his bacillus as a new microbe.

The outbreak of plague in Brazil inspired a visit to Rio de Janeiro by Prof. Camille Terni, director of the Bacteriological Institute of Messina, Italy. During his residence in Rio this learned bacteriologist has applied himself to the study of yellow fever.

In a conference on this subject, held April 10, 1900, he has established the following: (1)

The *bacillus icteroides* is found chiefly in the gastrointestinal apparatus; (2) in his opinion, it is by this channel that the infection of yellow fever occurs; (3) the bacillus is never found in the blood of the patient; (4) besides the ordinary fatty degeneration, the yellow-fever toxin induces in animals the development of the nutmeg liver.

As you see, the agreement could not be more complete. It is corroboration that establishes the value of scientific investigations. I attach the greater importance to the declarations of Prof. Terni for the reason that he was unaware of the results of my labors, which were, I believe, carefully concealed from him.

The question remains whether or not the *bacillus icteroides* is a form of the *coli communis*. Some day the bacteriologists will give a definite answer and it will then be seen on which side the truth lies.

However it may be, the researches of Prof. Terni strongly confirm my teachings as to the etiology of yellow fever, which I was the first to establish experimentally.

With my thanks, Sir, please accept the assurance of my most distinguished sentiments.

PHILIPPE CALDAS.

OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, December 10, 1900.

ALLEGED DEATH FROM THE USE OF THE ROENTGEN RAYS—AN OUTBREAK OF DIPHTHERIA AT CAMBRIDGE CHECKED BY PROMPT MEASURES OF ISOLATION AND PROPHYLACTIC INJECTIONS OF ANTITOXIN—CURIOUS CASE OF TRANCE AT NEWCASTLE—FORECAST OF THE REPORT OF THE HOSPITALS COMMISSION—EXONERATION OF THE MEDICAL CORPS, BUT FAILURE TO PLACE THE RESPONSIBILITY ON THE MILITARY AUTHORITIES—THE DIET OF THE POOR—PROPOSAL OF EDINBURGH PHYSICIAN TO INSTRUCT THEM IN DIETETICS—ARSENICAL NEURITIS OUTBREAK AT MANCHESTER.

A CASE in which death appears to have been due to the use of the Röntgen rays—the first on record—has just been the subject of a coroner's inquest: A woman, aged sixty-eight years, sustained an intracapsular fracture of the neck of the femur on March 21st. To ascertain precisely the injury a skiagraph was taken on April 7th, and as this was not satisfactory another was taken on April 27th. A ten-inch coil and a five-and-a-half-inch spark were used. The photographer asserted that time of exposure was respectively 35 and 45 minutes, but a niece of the deceased alleged that the exposures lasted two hours and two hours and ten minutes. After the first exposure nothing unusual occurred, but after the second the patient complained, on May 4th, of irritation in the lower abdomen and a rash appeared on the following day. The inflammation terminated in gangrene and a slough six inches in length and three inches in breadth formed. The slough was cast off and the surface became healthier, but the ulcer never healed. The patient died on November 5th. At the necropsy the heart was found to be flabby and thin. The fracture had not united. The cause of death was not found in the internal organs. The medical evidence was that death was due to exhaustion from shock, the result of fracture of the femur and exposure to the Röntgen rays. The jury returned a verdict to the effect that "the deceased met her death from shock and exhaustion following the accident and the effects of the Röntgen rays on a weakened system; no blame is attached to the doctor or the photographer." Mr. Lewis Jones, medical officer of the electrical department of St. Bartholomew's Hospital, who was called as a witness, said that he considered the time of exposure reasonable and that the prints were good photographs. The risk of a burn was always present. He had never seen or read of a death caused by the Röntgen rays.

An outbreak of diphtheria which occurred in Cambridge in a population of 50,000 shows the value of antitoxin injections as a preventive. The first case occurred on October 14th and the last on November 15th. In all there were 60 cases in 5 weeks. Nine cases occurred in one school. The school was closed and Prof. Sims Woodhead of the University was requested to act as consulting bacteriologist. The infants attending the school were visited at their homes, bacteriological examinations were made, and prophylactic injections of antitoxin were offered to them. These were accepted in the majority of cases. Antitoxin and a bacteriological examination were placed at the disposal of all doctors for their poorer patients. Four cases, the first of which was traced to the above-mentioned school, occurred in three other schools. These were closed and the children and their young brothers and sisters were examined and offered a preventive injection. Circulars were sent recommending the closure of Sunday-schools. A home was opened for those children in whose mouths suspicious bacilli were found. Here about 30 children who could not be satisfactorily isolated at home were sent. A circular was sent to medical practitioners asking them to keep their patients and suspects under supervision until 3 consecutive bacteriological examinations of their throats had been made. During the outbreak the daily notifications of cases of diphtheria rose as high as 9. The value of the preventive injections is shown by the fact that only one slight case of diphtheria occurred among those treated, although many of them were found to be harboring the diphtheria bacillus, while among the elder members of their families, who had not been treated, many cases occurred.

A curious case of trance is now under observation at the Royal Infirmary, Newcastle, in which the patient, a young man, aged twenty-six years, has been in a state of profound stupor for seven months. He is a clerk who has always been re-

garded by his friends as of a reserved nature, depressed and eccentric. Last March he became unconscious. Up to a few days ago he has made no movement of his voluntary muscles nor showed any knowledge of his surroundings. At night his eyes close in the ordinary fashion of a man going to sleep; they open in the day, but are devoid of intelligence or expression. Even under the strongest electric currents he made no movement. Owing to abstention from food he became "a living skeleton." For some time life was maintained by injections, then he was fed with the stomach-tube, and later he was able to swallow reflexly fluid placed in his mouth. He had been in the Infirmary five months when he first displayed any sign of intelligence. One of the nurses informed him of his brother's death. Tears fell from his eyes, but in no other way did he indicate that he heard the intelligence. One morning he muttered the name of the doctor who stood by his bedside. This was remarkable for the name had not been mentioned in his presence for a considerable time, which pointed to the fact that he was not so oblivious to his surroundings as was supposed. Two months ago food was given to him in the ordinary way and he gradually began to recognize, as far as could be judged by his expression, his surroundings. He was still speechless and motionless. He can speak slightly now, but his utterance is limited to the monosyllables "yes" and "no." He has also begun to move slightly his hands.

An intimation has been made that the report of the Hospitals Commission will be practically a vindication of the Army authorities. Some defects and evils will be admitted, accounts will be described as exaggerated, personal narratives will be declared to be imperfect and unreliable, and the Medical Corps will be complimented on the energetic way in which it combated enormous difficulties. There have been inexcusable neglect, needless suffering and fatalities, avoidable epidemics, and insufficient nurses, necessaries, and comforts—but not in all the hospitals. The Medical Corps was not responsible for these things, for the transport was not under them, but under the local commanders. The absence of necessary beds was not always traceable to anybody. The Government at home sent out the beds, stores, etc., but many of them never reached their proper destination. Hundreds of soldiers died of enteric fever who never ought to have had it at all. They died, in camps to which they never ought to have been sent, from want of proper care and food. The pressure was too great and no attempt seems to have been made to prevent the heavy loss that resulted by such instructions from home or such hearty cooperation between military and medical authorities on the spot as would have been effective. Military exigencies received every attention, hospital exigencies were not promptly dealt with. But the result of the Commission is not satisfactory. The Commissioners seem to have begun their inquiry as if they were investigating a definite charge against a definite body and one so inherently improbable as to give them a strong bias in favor of the accused. The result was foreseen. The Medical Corps is acquitted of inhumanity with which it was never charged. It is said to have made the best of the means at its disposal which was never challenged. But the failure to make the proper arrangements must rest on the War Office and the generals in command. The Commission might have ascertained this instead of merely acquitting the Medical Corps, which is all it appears to have done.

A very valuable piece of work has been done by four Edinburgh physicians who have investigated what the poor eat. Their report was presented to the Royal Society of Scotland by Dr. Noel Paton. Choosing a number of typical families at three wage-rates they kept for some time a record of their expenditure on food and of the kind of food bought. Class 1 was of families with irregular incomes, generally under 100 shillings a week; Class 2 of families in receipt of 110 shillings a week regularly; Class 3 of families earning 150 shillings a week and over. In Classes 1 and 2 the amount of food taken was ascertained not to be sufficient for the demands of the system, not enough to produce the energy required by adults or growth in children. The deficiency was 15.7 per cent. Always below par, these classes are unable to emerge from the state of life in which they find themselves, and, of course, they frequently collapse. Whether the collapse is moral or physical in aspect, poor feeding is a contributory cause. In a large measure poor feeding means improper feeding. The wrong kinds of food are eaten or the right kinds in wrong proportion. In the discussion which followed Sir J. Batty Tuke said that the weekly cost of food per head in the lunatic asylums was 64 cents, while a husband, wife and four children lived in the slums at a food-cost per week of 62 cents. If people of this class could be taught to observe a dietary they would have nothing to spare. After paying for food and rent the family has only 28 cents left with which to pay for clothing, fire and light for a week. There is no hope of tutoring these people in what calls for moral stamina. They are what they are from the weakening of moral stamina—hereditary and immediate—and with that, of course, physical stamina, for the two are in a broad sense inseparable. But among them there is always a proportion of merely unfortunate families of a better class, victims of the accidents of life and capable of rising. It is suggested that for the benefit of these and of the stronger artisan class above them instruction in dietetics should be given.

The outbreak of arsenical neuritis from contaminated beer is continuing to exercise great concern in the country about Liverpool and Manchester. The brewing industries are for the time being paralyzed. Many persons refuse to drink beer of any kind, and the temperance society workers are reaping a rich harvest of converts to the blue ribbon.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

FRACTURES OF THE JAW—PUERPERAL INFECTION—EXTIRPATION OF THE HYPOPHYSIS CEREBRI—MORPHOLOGY OF THE STAPHYLOCOCCUS ALBUS—PROSTATIC SECRETION—ERYTHEMA EXUDATIVUM MULTIFORME—AN INVALID'S KITCHEN—DIVERTICULUM OF THE URETER—INVAGINATIO ILEOCOLICA—OLLIVER'S SYMPTOM—RAILWAY ACCIDENTS AND THE NERVOUS SYSTEM.

Warnekros, at the Berliner medicinische Gesellschaft, October 17, 1900, lamented the fact that too little attention in lecture, in text-book and in private practice is given to the important aid the dentist may render in making dental supports in fractures of the jaw. Most of the treatises still commend the old-fashioned fixed splints, whereas almost any dentist can mould and apply the wire splints of Sauer. The author on many occasions has adapted such to the teeth and moulded rubber externally, thus giving a removable and sterilizable splint which will permit considerable chewing. So great is the value of these methods that it would be well to attach a dentist to every regiment, who in war would often be needed and even in peace could frequently render valuable aid.

C. Abel, at the meeting of October 31st, gave the following points relative to puerperal septicemia. There must be a certain number of unavoidable infections during some operations, but the death of from four to five thousand women annually in Germany of puerperal sepsis is appalling. The condition may be advisedly considered after the procedure of Prochowinck on bacteriological grounds, with considerable practical importance, as patients with systemic or local infection, either predominant over the other. In the latter class of case manual dilatation and removal of placental debris are always necessary. Lysol douches are not always advisable. Removal of the diseased uterus is rarely justifiable because so many patients recover without it. Boiled normal salt solution and oxygen-inhalations are of very great value. Local parametric and perimetric abscesses demand free evacuation. The injection of streptococcus serum or of turpentine to cause local aseptic foci is not good practice.

Maas, at the meeting of October 24th, described the results of removing the hypophysis cerebri, the relation of which to acromegaly has been stated. After many attempts, in company with Friedmann, he succeeded in totally ablating it. No visible effect during months of life after it and no evident pathological changes at autopsy were found. The experiments had served little in determining the function of the organ, perhaps because some other viscus undertakes it vicariously. It seems likely that this is not the thyroid gland. Friedmann briefly stated the operative method, namely, through the pharynx and sphenoid bone.

Saul, in speaking of the staphylococcus albus, said that the puncture-culture is really an artificially determined growth. If, on the other hand, instead of the agar-plate, which so soon dries out, fluid agar is taken, which later stiffens, a characteristic tree-like growth after several weeks, which will furnish a definite means of diagnosis, is found. The cocci in the branches are more or less fluidified by necrobiosis, while such as constitute the so-called leaves of the culture-tree are distinct.

Lohnstein, at the Verein für innere Medicin in Berlin, October 15th, said that he has examined the chemical reaction of the prostatic fluid in a large number of subjects who are the victims of chronic prostatitis. In the majority the reaction was acid, in the minority alkaline and in a very few neutral. This chemical feature of the secretion is without visible effect on the life and activity of the spermatozoids.

Heller repeated the fact that many writers have noted a relation between disorders of the genito-urinary and the gastro-enteric systems on the one hand and erythema exudativum multiforme. So pronounced is this condition that some have tried to produce the latter disease by provoking such causal disorder. Thus, Lewin by irritation of the vagina and urethra with oil of savin or silver nitrate regularly caused the skin lesion in one of his patients. Heller had a man under his care who after repeated marital coitus used an injection of creolin. A violent chemical irritative urethritis followed, with a copious purulent discharge, in which no trace of gonococci could be found. Very shortly an active erythema exudativum multiforme appeared, the course of which was completely parallel to that of the urethritis, both declining and after several weeks disappearing together. The recovery was complete.

Von Leyden, at the meeting of October 29th, described the newly-erected "Krankenküche," (Invalids' Kitchen), a recent philanthropic venture, aiming to provide good diet for the sick among the poor primarily and secondarily to sick travelers without family ties and such aid from that source. There are seven forms of diet supplied at the lowest possible cost with a small fee for delivery beyond a radius of two kilometers. The food is carried in suitable heating apparatus. The diet-list is as follows: (1) One-half liter of bouillon and a piece of chicken for 25 Pf. (6cts.) (2) One liter of soup and meat with vegetables or potatoes for 50 Pf. (3) Various soups at choice, meat with vegetables or potatoes or compot for selection, at 75 Pf. (4) Chicken and meat soup or the like; broiled or boiled meat with vegetables or the like; light sweets, 1 M. 25 Pf. (5) Similar but larger variety, 2 M. (6) Single portions from a menu, as meat and chicken, 80 Pf.; vegetables, 40 Pf.; sweetmeats and jellies, 75 Pf. to 1 M. 25 Pf. The institution tries to sell the food at the cost of the preparation of it and the management of the place.

Lippmann-Wulff exhibited a specimen of a ureteral diverticulum taken from a woman, observed during life and previously reported by him

in the *Centralbl. f. Erkr. d. Harn-und Sexual Organe* and finally confirmed at the autopsy. Fifteen years ago the woman's left kidney was removed and a few years later the right kidney was movable and had to be anchored into place. Then bladder symptoms developed and on cystoscopical examination a bulging forward into the bladder space was apparent at the terminus of the ureter, which led to the diagnosis of diverticulum of that viscus.

Schmilinsky, at the Aertzlicher Verein in Hamburg, October 16th, presented a specimen of invaginatio ileocolica. During life the patient presented to the right of and above the umbilicus a rather large tumor, crescentic, with a prolongation about as thick as the thumb into the transverse colon and having a tendency to harden under palpation. In addition there were attacks of pain of variable severity and duration, inanition, vomiting and diarrhea during the colic. The technic of the operation was very difficult and soon after it death from suppurative peritonitis supervened.

Piza brought forward a specimen of *Primula oconica*, well known and used in house and table decorations, as the cause of exanthemata in people concerned in the cultivation and sale of the plant. Although the treatises on dermatology make mention of this plant as one of the existing factors of dermatitis, the average practitioner is not fully aware of it. The form the skin lesion usually takes is that of an acute, follicular or vesicular eczema which is very troublesome in itching, especially at night and over the hands. The cause seems to be the contact of the fluid produced in the trichomes and secreted when the plant is touched. Individual disposition is very important. Gardeners and florists very commonly are the victims. Since this secretion is freely soluble in alcohol, disinfection of the hands and forearms in it is the best prophylaxis. The treatment of this obstinate dermatitis is on general lines.

Jessen discussed the value of the Olliver symptom by means of two preparations. The first specimen was that of a large, intrathoracic, aortic aneurism, probably due to a syphilitic aortitis. Olliver's sign was wanting. On the other hand, the second specimen was that of a diffuse mediastinal sarcoma. In this patient, owing to intrathoracic obstruction, there were apparent edema of the face and chest, pulsation over the manubrium sterni and asymmetry of the radial pulse. Thus the differential diagnosis was very difficult, until given by a metastasis in the right upper lobe. Hence it follows that Olliver's symptom is not sure proof of aneurism, but rather of some change in the space limits of the mediastinum.

Saenger reported his many recent observations of the immediate and remote effect on the nervous system of railroad accidents. Of thirteen patients hurt in 1897, six are now absolutely free from pain or other symptoms; four have slight neurasthenia, sleeping less restfully than previously, have occasional headache and some manifestations of anxiety; two boys have now less mental receptivity than before; and one patient has not been heard from at all. Out of fifteen soldiers injured in 1899, only one now manifests any nervous trouble and this is insignificant. Three railway employes who suffered really very slight injury have all shown marked hysterical manifestations. One engine-driver, badly injured, lost in fourteen days all signs of nervous damage, while another really less hurt showed a melancholic tendency. Severe neurasthenia afflicted one sentinel, probably through anxiety, although he was not hurt himself; similarly a brakeman was attacked through overwork. It becomes, therefore, apparent that in the majority of cases the remote results upon the nervous system are not so bad as have been previously taught. Very few have been rendered unable to earn their living. Not one presents the dreary traumatic neuroses of Oppenheimer, not one has shown the trophic skin- and hair-changes. Only four of the twenty lost consciousness at the time of the calamity, who with the two boys make but six in whom the cerebrum has been manifestly affected. In seven or eight was fear very much marked at the moment of the accident, the majority suffered from excitement after it. The most significant thing seems to be the greater severity of the hysteria and other nervous signs in the employees when compared with private citizens. In illustration there are those who suffered no bodily damage. It is likely that very trying service, loss of sleep and official responsibility were largely the causes. Added to these are the misuse of alcohol and tobacco and poor food which tend to induce early arteriosclerosis among the working classes. The final conclusion is that individual disposition, habits of life, condition of work, actual state of health as to chronic nervous and other diseases, are important factors in which may be found the cause of nervous disturbance as well as in the actual bodily damage.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, November 6, 1900.

The President, Frederick Peterson, M.D., in the Chair.

Paralysis Agitans Without Tremor.—Dr. M. G. Schlapp presented this case. The chief features were the rigidity of the muscles, the expressionless face, and the position of the arms, body and hands. The flexor muscles were more contracted than the extensors. There was no tendency to fall in any particular direction.

Paralysis of the Duchenne-Erb Type.—Dr. Schlapp also presented a man who, six weeks ago, had fallen from a bicycle, striking his shoulder. He had been unconscious for five hours. The case was interesting because the anterior

pectoral muscles were affected. There was complete degeneration reaction of the pectorals, biceps and the coracobrachialis, and it was incomplete in the triceps and supinators. There was a peculiarly distributed area of anesthesia showing involvement of the musculospiral and musculocutaneous nerves chiefly. The lower part of the pectoral muscle showed some slight response to the faradic current. The lesion evidently involved the fifth and sixth roots of the cervical plexus. As the anterior thoracic nerves are involved it is not a perfectly typical case.

Drs. C. L. Dana and M. Allen Starr said that they had each seen a similar case.

A Case for Diagnosis.—Dr. J. Fraenkel presented a man, forty years of age, a tailor by occupation, who claimed to have been well up to one year and a half ago. There was no family history bearing on his condition, nor was there any history of any previous acute trouble. About eighteen months ago the man had been pushed roughly off a street car. On awakening the next morning at home he had been absolutely helpless, being unable to move his upper or lower extremities. After six months he had been admitted to the Lebanon Hospital, but had left there, according to the history, unimproved. On coming under the speaker's observation, there had been noted at once the presence of an extensive eczema. On a second examination the shoulder-joints had been found partially ankylosed, and the muscles surrounding them appeared atrophic. There was also atrophy of the supraspinatus and infraspinatus, and slight atrophy of the serratus muscle. The electrical reactions were not changed. A thorough examination of his nervous system proved absolutely negative. There was a peculiar atrophic condition of the skin and a condition of cyanosis on the peripheral parts. There was slight valvular disease of the heart. The diagnosis seemed to rest between rheumatism, a general trophoneurosis and general syphilis.

Dr. B. Sachs said that he had examined this man previously and had been led to think of symmetrical muscular atrophies such as occur after arthritic processes. It was not usual, however, to have them quite so symmetrical. It did not seem to him to correspond to any of the dystrophies or any of the spinal forms of progressive muscular dystrophy. He had had a suspicion that the case might be one of leprosy.

Dr. M. Allen Starr said that when traveling in Norway some years ago he had seen a number of lepers, and had had his attention called to the existence of muscular atrophies in them. The peculiar appearance of the man's face had led him to think of leprosy without knowing Dr. Sachs' view on the case.

Dr. Fraenkel said that very careful inquiry had failed to elicit anything but the most positive statements that the man had been in perfect health up to the time of being thrown from the car. The man had come from the southern part of Russia. A dermatologist had seen the case and had been told that leprosy was suspected, but he replied that the thickening of the face was due to the previous eczema.

Dr. Schlapp said that Bechterew had described somewhat similar cases of "stiff back." There was a possibility of some of the roots being affected.

Dr. C. L. Dana thought this case was one of rheumatoid arthritis and the condition of the skin was the result of an eczema.

Dr. F. Peterson thought it was an anomalous type of chronic rheumatoid arthritis. The fact that the muscles reacted normally would tend to confirm this belief. It was certainly not a spondylose rhizomyelique. This might, of course, be a case in which the spinal cord symptoms were developed later.

Dr. B. Sachs presented the spinal column and the shoulders from a case of spondylose rhizomyelique. The heart also showed previous rheumatic disease.

Spasmodic Torticollis and Its Treatment.—Dr. W. M. Leszynsky read a paper with this title. He said that wry-neck must be classified among the musculonervous disorders. The first case reported was that of Mrs. X., thirty-six years of age, seen by him in 1895. About seven years ago she had suffered from pain and stiffness in the muscles of the back of the neck for several days. She had been greatly worried for a number of years by a protracted lawsuit. There was no family history of nervous disease. In February, 1895, after a fall on the ice, she had begun to suffer from nervous attacks, and in June she had first noticed a tendency of the head to turn toward the left. On examination she was found to be fairly nourished, but anemic. There was frequent and well-marked tonic spasm of the right sternomastoid muscle. Her eyes had been examined and found normal. Her general condition was that of neurasthenia of the lithemic type. She was advised to rest in bed for three months and was given the usual tonics. After two weeks atropine had been injected into the affected muscles, the daily dose being increased slowly up to 1/80 of a grain. At this time the symptoms of atropine poisoning had been so severe that it was discontinued. For a few days after this the spasm of the muscles was decidedly worse. The convulsive attacks lasted about twenty minutes, were very violent and were associated with marked impairment of respiration. Under the use of morphine and potassium bromide the paroxysms had gradually subsided in the course of two weeks. Subsequently various remedies had been employed, but without benefit. The urine was always acid and of high specific gravity. After four months there had been considerable improvement in her general condition but not in the spasm of the muscles. The rest treatment had been continued for some time longer under the advice of the late Dr. E. C. Seguin, but she had finally re-

belled and had gone home. Some months later a brace had been applied, and this had gradually controlled the convulsive movements. The brace had then been discarded, but some tonic spasm in the muscles had still continued. Although there had been no return of the clonic spasm there was still slight occasional tonic spasm of the upper segment of the trapezius muscle. This case pointed to a strong hysterical element, although the patient did not present the usual stigmata of this affection. There was undoubtedly also a lithemic condition.

The second case was that of a woman, twenty-four years of age, whom he had seen on October 24, 1897. At that time there had been a marked spasm which had existed for nearly eight months. She had suffered from migraine for a number of years, and there was no history of trauma. She had been kept in bed and the usual rest cure methods employed for two months. The atropine injections had been used for about two weeks, and they had temporarily controlled the spasm. They had been discontinued after two weeks. She had made a complete recovery at the end of six months, and had remained well since that time.

The speaker said that in 1884 he had recommended the use of atropine in this class of cases. Since then he had employed it in 12 cases, and had found that in many cases it was unsatisfactory, and he now believed it should be looked upon as simply an adjuvant to other measures. The prognosis depends upon the duration and the persistence of treatment. The principal therapeutic feature in every case should be the use of massage and the methodical education of the muscles and their coordinating centers. His attention had first been directed to this valuable method by Dr. Coggeshall of Boston. It was a mistake to resort to surgical measures in the early stages of this disorder.

Dr. C. L. Dana said that in his experience if the wry-neck were pretty closely limited to the spinal accessory and sternomastoid, an early resection would often check the disease and prove most useful. He quite agreed with the reader of the paper concerning the treatment of the older cases.

Acute Ataxia.—Dr. C. L. Dana read this paper, classifying acute ataxia as: (1) The acute bulbar and cerebellar ataxia; (2) acute spinal ataxia, and (3) acute peripheral ataxia due to multiple neuritis of the sensory type. He said that Ebstein had reported a case of acute ataxia with autopsy, and as patches of sclerosis had been found the case had been looked upon as one of multiple sclerosis in an early stage. The peripheral type includes those cases due to the sensory form of multiple neuritis. Up to recent times there had been no definite description of acute ataxia of spinal origin not due to tabes. In 1897 Dr. Strauss had, however, reported two cases occurring in men about thirty-four years of age without history of syphilis or other infection. The description seemed to the reader suggestive only of locomotor ataxia. The cases of acute ataxia first described by Leyden, and still referred to by him as acute bulbar ataxia, certainly had a strikingly characteristic clinical course, so that the name might have some clinical value. Special attention was called to five cases of non-tabetic spinal ataxia which were reported in the paper. The following is illustrative: A man of sixty on January 9, 1890, had begun to feel numbness in the feet, and in a few hours this had extended to the mid-dorsal region. He soon developed a tight sensation around the waist. Ten days later, on coming under observation, he had a staggering ataxic gait, and soon became tired. He could not stand with the eyes closed. He showed distinct loss of muscular sense, but no impairment of the functions of the rectum or bladder. The patient had gradually recovered, and was now well. In another case, that of a man, seventy-two years of age, syphilitic infection had occurred one year previously. Just after recovering from an attack of iritis he had developed a type of ataxia like that described in the preceding case. In two other cases the disease had been in old people, but in neither of them had there been a history of syphilis. They both were victims of overwork, and both had presented symptoms of marked senility. It would seem that these cases were due to senile arterial changes, or due to syphilitic changes in the blood-vessels of the spinal cord, causing hemorrhages or blocking of the vessels, or both. It was possible that in old age the syphilitic virus might lead to attacks on the posterior rather than on the lateral columns, so that the type would be ataxic rather than of the spastic paraplegic type. All of his patients had recovered from the ataxia. The differential diagnosis must be made from an acute onset of a locomotor ataxia.

Dr. Joseph Collins said that his clinical experience had been somewhat different from that of Dr. Dana, so that he had been led to a very different conclusion regarding the etiology. Some of his cases had been in persons of about forty-four years of age without evidence of syphilitic infection. Some times there had been inability to walk in the course of a week. This had been associated with slight incontinence of urine, at times, and with sexual impotence. In these cases there had been none of the cardinal symptoms of multiple sclerosis, and no evidence of cardiac or vascular degeneration. This was a type of case which he had been accustomed to call "acute ataxia." A second class of acute ataxias was acute bulbar ataxia. One of these was a woman, thirty-five years of age who, about August 14th, had begun to complain of dizziness and blurred vision. Shortly afterward, while dancing, she had become ataxic, and then had lain in bed for a long time with marked ataxia and with slight anesthesia of the face. The sense of position had been lost. Later, the symptoms of bulbar involvement—regurgitation

through the nose and bulbar speech—had appeared. The cases of acute ataxia with which he was familiar clinically were those presenting features similar to the ones reported by Dr. Sanger Brown of Chicago, recently, in the *American Journal of the Medical Sciences.* Dinkler had come to the conclusion that the lesion must be somewhere in the corona radiata or in the large basal ganglion.

Dr. Smith Ely Jelliffe said that he had had under his observation for three years a man, thirty-six years of age, who had been infected with syphilis. He was a politician, and at the crisis of a campaign he had suddenly found himself unable to walk. On either side there had been ataxia confined to the lower limbs, and associated with some trouble of the bladder. He had been put on antisyphilitic treatment, and had been practically well in three weeks. He had remained well for a year, and then had had a sudden attack which had resulted in a typical spastic paraplegia. He had eventually died from this, and his spinal cord had exhibited the usual lesions of that affection. In the first attack there had seemed to be an acute ataxia due to involvement of the minor blood-vessels.

Dr. Schlapp reported the case of a man of fifty, an intemperate longshoreman. Three years ago he had developed ataxia and now had a disturbance of tactile and pain sense in the feet. Electrical reaction was diminished. The case looked to him like a neurotabes peripherica. The Romberg symptom was present. The knee-jerks were slightly exaggerated. The case might perhaps be classed as an acute ataxia of the peripheral type.

Dr. Fraenkel said that from the pathological standpoint the condition probably occurred quite frequently, and was often overlooked. He would like some points on the differential diagnosis between organic and functional conditions. The symptoms given by Dr. Dana were not sufficiently objective.

Dr. J. F. Terriberry commented upon the fact that these old people reported by Dr. Dana should have recovered so readily if the vascular system had been so damaged. For this reason he doubted if the vascular system had been especially at fault. Ataxia was a symptom rather than a disease, and the attempt to consider it as anything but a symptom was likely to lead one astray. He was in favor of considering these cases that recover late in life as of neuritic origin.

Dr. Dana said he had not met with the class of cases described by Dr. Collins. Dr. Brown's cases did not seem to be exactly cases of pure ataxia, and hence he had not referred to them. One must distinguish between an ordinary unilateral ataxia such as occurs from acute softening of the pons or medulla and the acute bulbar ataxia of Leyden, which is bilateral. It was a common experience to see old people with hemiplegia and hemorrhage recover in spite of the degenerated condition of the blood-vessels.

BOOK REVIEWS.

A Practical Treatise on Fractures and Dislocations. By Lewis A. Stimson, B.A., M.D., LL.D., Professor of Surgery in Cornell University Medical College; Surgeon to the New York and Hudson Street Hospitals; Consulting Surgeon to Bellevue, St. John's and Christ Hospitals. Third Edition. Lea Brothers and Co., New York and Philadelphia, 1900.

The necessity of publishing a third edition of this valuable book so soon after its almost complete revision in 1899 has given the author an opportunity to bring this volume up to the latest date. Even in so brief a time important advancement has been made in our knowledge of fractures and dislocations, especially in regard to traumatic hematomyelia which is most clearly and fully discussed in the present volume. Nearly all the ordinary lesions are illustrated by beautiful reproductions of X-ray photographs, which now constitute such an important aid in the diagnosis of all bone deformities and displacements. In the 1899 edition the chapters on fractures were almost entirely rewritten and revised, and notable changes made in the treatment of old dislocations. This book now embodies a most complete and comprehensive discussion of the subject of fractures and dislocations and deserves more than ever the reputation, which it has held for some time, of being the best recognized authority upon the subject published in the English language.

Malaria According to the New Researches. By Professor Angelo Celli, Director of the Institute of Hygiene, Rome. Translated from the Second Italian Edition by John Joseph Eyre. Longmans, Green and Co., New York, London and Bombay.

In the Introduction to this work Dr. Manson of England says that it is due to the masterly work of the Italian school that most of our knowledge of malaria has been gained. The researches of Marchiafava, Celli and Bignami opened up the way to the splendid work of Ross of two years ago, and this selfsame Italian school was the first to confirm his work, to extend it and to throw themselves with energy into the indicated hygienic measures.

With reference to the work itself, it is not too much to say that it is, of the shorter monographs, one of the best that has been published. The history, economic consequences, etiology, sources of infection, life of germs in the environment, vehicles of infection, path of penetration, etc., are considered under the general heading of Epidemiology. Part II., on Prophylaxis, discusses the means of prevention, first concerning the cause itself and, secondly, those means which are directed against the predisposing causes.

As a thorough, up-to-date and readable summary of our present knowledge of malaria the work can be most cordially recommended.

Diseases of the Eye, Ear, Nose and Throat. A Pocket Text-Book of Diseases of the Eye, Ear, Nose and Throat, for Students and Practitioners. By William L. Ballinger, M.D., Assistant Professor of Otology, Rhinology and Laryngology in the College of Physicians and Surgeons, Chicago, etc., and A. G. Wippern, M.D., Professor of Ophthalmology and Otology in the Chicago Eye, Ear, Nose and Throat College. Lea Brothers & Co., Philadelphia and New York.

This series of manuals forms a good index of the modern advance in medical book-making. While compendiums were notably careless in their make-up some years ago, these are models of the best book-making. The illustrations are clear, well reproduced and really illustrate. The colored plates are artistic reproductions of important anatomical preparations. There is but one fault to find with the book and that is that its 500 odd pages of matter on heavy paper should be crowded into a cloth binding. The contents of the book fit it eminently for frequent consultation and it would seem that for this purpose these pocket text-books should be bound in some more durable material.

The work of compression necessary to present such large special subjects as the eye, ear, nose and throat in a small compass to the general practitioner is very well done. The chapter on Retinoscopy, for instance, is a model of clearness, although contained in less than five pages of the book. The determination of the hearing capacity by various methods is very practically discussed and in a manner that cannot fail to be of great help to the busy practitioner who sometimes finds himself in the necessity of determining the quality and range of the hearing power. This dictum, for instance, is a sign of the practical and conservative attitude adopted, no matter what amount of improvement.

The chapter on Diphtheria is notably good, as is also the treatment of various pathological conditions connected with all the tonsils. There are necessarily signs here and there of the compression that had to be practised in order to bring the extensive subject-matter within the scope of a book of this size, but it is difficult to see where and how this little text-book could have been improved.

Practical Urinalysis and Urinary Diagnosis. A Manual for the Use of Physicians, Surgeons and Students. By Charles W. Purdy, LL.D., M.D., Queen's University, Fellow of the Royal College of Physicians and Surgeons, Kingston; Professor of Clinical Medicine at the Chicago Post-Graduate Medical School. Fifth Revised and Enlarged Edition. With Illustrations, Including Photo-Engravings and Colored Plates. Philadelphia, New York, Chicago: F. A. Davis Company, 1900.

In this volume the author bridges the gap between the purely clinical aspects of urinology as it is treated of in works on medicine and the descriptions of chemical reactions and technical manipulations forming the main bulk of books on urinalysis *per se.* The clinician and the chemist are placed on common ground and their joint knowledge combined in a way that cannot but be helpful to the student and of service to the practitioner for reference. A notable feature is the beautiful way in which the author has elaborated the subject of centrifugal analysis, and it is mainly to his exertions that we are indebted for practical working methods for determining by this means the quantities of chlorides, phosphates, sulphates and albumin in urine with a degree of accuracy equal to that of any method and at an enormous saving of time. The significance of this is apparent when it is known that by the use of the centrifuge and the author's tables a fairly complete analysis of urine, both quantitatively and qualitatively, may be made in from twenty minutes to half an hour, while formerly it took twenty-four hours' time. The section on urinary diagnosis is equally complete and valuable and presents logically systematized information which to obtain otherwise would require a search through many volumes. In this, the fifth revision, much new matter has been added and a book produced that deserves unqualified praise.

BOOKS RECEIVED.

A Manual of Materia Medica and Pharmacology. By Dr. D. M. R. Culbreth. Second Edition. 8vo, 881 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York. $4.50.

Malaria According to the New Researches. By Dr. Angelo Celli. Translated by J. J. Eyre, M.R.C.P. 8vo, 275 pages. Illustrated. Longmans, Green & Co., London, New York and Bombay.

Studies in the Psychology of Sex. By Havelock Ellis. 8vo, 275 pages. F. A. Davis Company, Publishers, Philadelphia, New York and Chicago.

Obstetrics. A Manual for Students and Practitioners. By Dr. D. J. Evans. 8vo, 409 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York. $2.25.

Report of the Commissioner of Education for the Year 1898-99. Vol. I. and II. Washington, D. C.

Transactions of the Texas State Medical Association. Thirty-second Annual Session. 8vo, 400 pages. Illustrated. Austin, Texas.

A Practical Treatise on Medical Diagnosis. For Students and Practitioners. By Dr. J. H. Musser. Fourth Edition, Revised and Enlarged. 8vo, 1104 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York. $6.00.

Kroll's Stereoskopische Bilder zum Gebrauche fuer Sc[illegible]elende. Dr. R. Perlia. Fuenfte verbesserte und ve[illegible]ehrte Auflage. Leopold Voss, Hamburg.

Dis[illegible]ection and Disinfectants. By Dr. H. M. P[illegible]ken. 12mo, 87 pages. Trade Periodical Com[illegible]y, Chicago, Ill.

[illegible]yclopedia Medica. Editorship of Dr. Chalmers [illegible]atson. Vol. II., Brachial Plexus to Digestion, 562 [illegible]ages; Vol. III., Diphtheria to Food, 546 pages; Vol. IV., Foot to Hernia, 534 pages. Longmans, Green & Company, New York, London and Bombay.

Biennial Report of the Department of Health of the City of Chicago. For the years 1897 and 1898.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

THE NITRITE TREATMENT IN SYPHILIS.

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THE frequent occurrence, varied character and chronicity of syphilis make it a disease that often taxes our therapeutic resources. The common and more useful remedies have their greatest potency in the early and middle stages, while the tertiary period, with its varied and indirect manifestations, we are less capable of combating. This leads us to seek means for improving the corresponding lines of treatment.

The use of the nitrites in this disease originated in two quite independent sources and with widely different objects in view. While the present article is intended to deal with only one of these methods, still, for the sake of completeness and to avoid misunderstanding, a brief notice will first be given of the other plan.

Induced apparently by certain chemical considerations which it is not necessary here to detail, Petrone of Naples essayed the subcutaneous use of nitrites in syphilis. His two cases were described under the title "Sull' uso dei nitriti nella cura delle malattie infettiva," in *Riforma Medica* for August, 1895 (v. *Giornale Italiano delle Malattie Veneree e della Pelle*, Sept., 1895). His initial dose was 5 to 10 centigrams and this was increased to a maximum of half a gram daily. It was given hypodermically in solutions of two to three per cent., a strength of five per cent. being often painful. In one of his cases there was a combination of paludism and syphilis. In this case treatment lasted thirty days. The second case was that of a woman of twenty-two years affected with hereditary syphilis. The treatment was continued twenty-six days. A complete cure was claimed. Sprecher of Turin, however, reported the following year less favorable results in his twelve cases. In his hands it only seemed to relieve osteocopic pains somewhat and caused much local discomfort.

Recently Prof. Darkschewitsch of Kasan (reported in *Neurolog. Centralbl.*, April, 1900, p. 378) related his favorable results in tabes dorsalis. He followed Petrone, injecting once a day one centigram of a one- to three-per-cent. solution of the nitrite of sodium in water (starting with the one-per-cent. and increasing). The course in each patient extended to not less than eighty injections. Under this treatment he observed the shooting pains decrease, the ataxia and weakness of the lower extremities improve, not rarely, amelioration of the symptoms in the pelvic organs, especially the bladder, and increase of the body weight. In cases of pronounced optic atrophy the papillary arteries filled up to the normal, and vision improved. Of course the usual head-manifestations of the drug were noticed.

Very likely other reports on this method have appeared, but the above references suffice to indicate the plan and the results accomplished. The expectation of that method, as claimed by its originator, is that the nitrite will act directly as a remedy in itself for the disease.

The other method of using nitrites in syphilis originated with the writer. It was first described by him in an address before the Medical Club of Brooklyn, June 24, 1895 (published in "The Normal and Pathological Circulation in the Central Nervous System," 1897, pp. 166-9, from which quotations below are taken). Before writing on the subject at all, the plan had been given careful testing at my hands and those of medical consultants. In the period that has since elapsed much additional experience has naturally been gained. The whole matter can be better presented by specifying the main facts and conclusions than by giving series of cases.

A correct understanding of the way this remedy acts in syphilis will prevent disappointments and enable us the better to secure desired results. The European view may have some warrant, but that point it is not necessary to discuss here beyond noting that in several of the cases reported abroad it is far more probable that the good obtained depended on the principle for which I contend.

My reason for resorting to this method is the widespread tendency of syphilis to cause arterial interference. This usually means a narrowing of the lumen, either from organic changes or at times by vascular spasm. The recent work of Abramow (1899) and of Berkley (1900) corroborates previous views that in these processes the muscular layer of the artery remains relatively long intact. To meet this, symptomatically at least, it was natural to have recourse to the group of vasodilators, and of these the nitrites stand at the head. My purpose was and is to have the drug act in a symptomatic manner, and not as in itself a specific cure for syphilis.

"It should be borne in mind that often the so-called specifics for syphilis will develop their desired local action only after the vessels have been dilated. When they are almost closed it is evident that little blood, and consequently little of the medicament can reach the imperiled point.

It is necessary, if possible, to open the vessel-path, and, while keeping it open, follow up with the more direct specifics. . . . We all know that at times an undoubtedly syphilitic process fails to respond well to treatment. Some of these cases can be reached by this plan, and very many by a less amount of specific than otherwise."

The method employed by me aims first to secure the temporary safety of the patient where there is immediate danger, and then more widely as a means by which to get better results from routine specifics. "For this purpose the hypodermic use is unsuited. Prolonged action without untoward effects is that here desired." The hypodermic use masses the drug's effect, but correspondingly shortens its action. We want it, on the contrary, as nearly continuous as possible. Hence the more volatile and fleeting preparations like nitrite of amyl are of limited value, and in only a less degree does this hold for nitroglycerin.

My earliest and greatest experience with this means has been in cases of syphilitic disease of the brain arteries. In many of these cases it is perfectly practicable to make a diagnosis, even so far at times as to approximate the vessel or vessels chiefly involved. Most often doubtless it is the Sylvian or its branches or the basilar. But the main thing therapeutically in such cases is to determine the nature of the process affecting our patient, the exact vessel being immaterial except in so far as it may help to insure the general diagnosis. There are nearly always prodromal warnings. Where these are not heeded we know but too well the danger of complete blocking and irreparable necrosis in the threatened brain area. The immediate results obtained here by the use of nitrite are strikingly satisfactory to patient and physician. Threatening symptoms are promptly relieved, the case loses its emergency aspect, and we can proceed more deliberately with the treatment.

Somewhat allied to this type are those cases of depression melancholias and even suicidal tendencies that are evidently syphilitic in origin (not, of course, including the syphilophobics). Here the buoying qualities of the nitrites are very marked, and will sometimes be life-saving.

By degrees a variety of cases, either somewhat different in character or in other parts of the body, but involving like principles, have come under notice. These serve to more clearly establish the method and extend its scope.

In the so-called parasyphilitic changes, when once well developed, the nitrites are not of great use. Still, as the vascular element plays quite a part in their development, much assistance can be gained by the employment of this agent in all the initial and early stages.

So also in the early stages of progressive dementia nitrites often form a very useful adjunct. They meet a natural indication in this trouble independent of its specific or non-specific origin. The good effects are, however, temporary unless enforced by hydriodic acid, brucine and other aids. Still, as a whole the nitrites perceptibly improve the poor therapeutics of incipient or developing paresis. In some cases we seem able with this additional help, to arrest its progress, and even the physical signs may largely abate. Inasmuch as this disease is pathologically of vascular origin it is easy to see that it might be specially influenced by nitrites. Rare cases have been described where paresis has been most favorably influenced by trephining, blistering of the scalp, or inflammations about the head. It is evident that these must have acted largely through the vascular arrangements. In the nitrites we have an agent acting in the same sense and that can be perfectly regulated in dosage.

On the diabetes (glycosuria) of old syphilitics this agent has repeatedly shown its value. In one case seen last spring with Dr. H. C. McLean, this plan, including the subsequent free use of iodide, led to the entire disappearance of this symptom.

Of spinal disorders the one where it has proven particularly useful is the rather common spastic form of spinal syphilis described by Erb (*Neurologisches Centralblatt*, March 15, 1892). He did not determine its anatomical basis although suggesting an affection of vascular territories, and I am not aware that anything definite is known on that point. It is certain, however, that the nitrites aid materially in handling it, although this is otherwise, next to gumma, the most amenable form of spinal syphilis. Very likely it depends on spinal arteritis and hence the good effects obtained from nitrites.

It is possible that the once favorite use of nitrate of silver in tabes depended for any good it may have done upon the slight nitric element rather than upon the silver. At the same time it has not been my good fortune to see any very striking results from the nitrites in this affection, although in some cases useful, and in every case worth trying.

In gumma of the brain or cord nitrites help materially to get the desired rapid action of mercury and iodides.

Specific troubles outside the central nervous system, especially when accompanied by pain, may be thus favorably influenced. For instance, in the recent case of a young man with known hereditary taint, the symptoms of a sharp first attack of appendicitis yielded readily to this means after complete failure of the ordinary remedies.

The nitrites are indicated in all syphilitic disease of the arteries, as a rule in all specific affections attended by pain, in all syphilitic brain troubles, and especially in the later and hereditary forms of syphilitic disorder (cerebral, spinal, peripheral). This lumps clinical indications rather than differentiates them, but for present and practical purposes it may suffice. *With these indications goes the mandate to immediately employ such other and more directly*

specific agents as the case demands. The title of this paper is intentionally made Use *in* Syphilis, not *for* Syphilis. It is understood that the glycerin and erythrol preparations are nitrates. But it is what is known physiologically as the nitrite action that is developed and hence that term is used in this article.

Administration.—In the use of the nitrites certain by-effects, in general unpleasant, are met with more or less frequently. The frontal pressure, fulness of the head and even headache are presumably inherent, if we succeed in getting the desired physiological action, no matter which preparation is employed, and hence we may not expect in any way to materially avoid them. Whether the drug acts quickly or slowly so long as it acts forcibly these secondary effects must be expected. A certain tolerance usually develops, possibly the expression of systemic accommodation. In the case of the rapidly-acting nitroglycerin, the head-manifestations may be more sudden and transient, but the difference is only one of degree.

Not so, however, in the case of the peculiar gastric discomforts that soon become intolerable to many patients. These are evidently due to the decomposition of the nitrite in the stomach. The nitrite of amyl need not be considered, as its action is too evanescent. Of the other preparations, nitroglycerin alone possesses in my experience practical freedom from this objection (due presumably to the fact that it goes unaltered into the circulation). For that reason this preparation is, for any prolonged periods, the one we are often compelled to employ. Nitrite of sodium may be tried at the start and in rare cases continued some time. Usually, however, the complaints are soon so urgent that a change has to be made. Some of my colleagues using these preparations find less complaint against them.

Since the more general accessibility of the tetranitrate of erythrol I have made considerable use of it. Possibly the gastric complaints are somewhat less or more delayed than in the case of the sodium salt, but there is no great difference in the two on this point. Lethargic and stuporous individuals can sometimes continue it awhile. The employment of this preparation is based on the results obtained by Bradbury (*Lancet,* 1895, II, pp. 1205-1213) who showed that its peculiar nitrite properties are slower and more lasting in their effect, beginning in half an hour and continuing several hours. He recommends doses of a grain or more, given either in solid form or dissolved in alcohol. In my work doses of half a grain are quite sufficient at the start, and even that amount may soon be complained of. I find that clinically, as was shown by Bradbury experimentally, it does not cumulatively lose its effect, as is the case with nitroglycerin. Its slower action is its other most desirable quality.

The desideratum at present is some vasodilator at least as slow and prolonged in its action as the erythrol salt, and at the same time as free from gastric disturbance as is the glycerin preparation. Doubtless some of our chemists or workers will find an article free from drawbacks, or perhaps some combination in administration that will prevent this without invalidating effectivity. Meanwhile, although we can begin with one of the sugar combinations (mannitol nitrate having also been recommended) or the nitrite of sodium, we shall usually have to fall back on nitroglycerin for prolonged use, despite its lack of needed staying qualities. Occasionally we need at the start a very prompt agent, and then of course nitroglycerin is just in place.

The method of administration is also of importance. For my plan the hypodermic use is quite unsuited. That only makes the action of the nitrite the more temporary, and leaves the course of events unaffected until the next dose. It is moreover often painful, but that is not the essential objection. As nearly a continuous action as possible is what is in order and for that purpose administration by the mouth answers best. One to two grains of sodium salt are usually sufficient, at least for the earlier doses.

All of these agents are highly explosive if improperly handled. This should be borne in mind in making combinations, a practice not to be recommended when dealing with the nitrites. The sodium salt should be given in solution, while the sugar preparation is available in tablet form.

THE FAILURE OF THE CONSENSUS JUDGMENT WITH REFERENCE TO TUBERCULOSIS.

By CHARLES DENISON, A.M., M.D.,
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It has been a custom with many physicians to send out circulars of questions to the profession expecting through the opinions thus obtained to aggregate average results. But the majority vote settles nothing in the scientific investigation of undetermined conditions, except to show that the greater number of minds are working in the same groove, and the decision of many of those who do give an opinion is influenced more by the confidence they happen to have in the judgment of another than by any knowledge they have gained through personal investigation.

As to tuberculosis there is unanimity enough in the medical profession, such as it is. But this unanimity reminds one of a band of antelope beguiled by the wily hunter to investigate his red bandanna suspended on his ramrod near his hiding-place. We need more originality in method and independence in investigation in order to solve this tuberculosis problem. Tuberculosis congresses are assembled, symposiums on sanatorium[1] and other methods of treatment are held,

[1] The word *sanatarium* is here used to mean a "closed" institution for the treatment of invalids, in contradistinction to *sanitarium*—a health station or health resort.

and the ways of limiting and destroying the germ are discussed. Old "saws" are refiled, backed by the agreement of a multitude of witnesses, but we do not seem to get very much nearer the root of the matter.

Some twenty-seven years ago I thought I had discovered the way to solve the problem. I undertook to get the consensus of the experience of 3500 carefully selected physicians representing the whole United States upon the subjects of inheritance and climatic treatment The causative conditions and after-longevity of consumptives of different varieties, ages and stages of disease were to be determined for bad, medium and good climates. Then even life insurance companies could calculate their income savings through the change of residence of their invalidated insured. The replies to this circular of fifty questions were generous and interesting. But Professor Lusk of New York wrote, after spending half a day giving his own answers, that he would give more for an individual opinion than he would for the combined answers of the whole medical profession. This was a discouraging criticism of the consensus method. Its wisdom, however, was verified by the necessity to practically abandon the original plan, because of the neutralization of the evident good work of some reporters by the unreliable, indefinite and questionable experience of their confrères, or of those from other quarters.

Just now the prevailing opinion among medical men appears to be in favor of home management and the local hospital treatment of tuberculosis, and every consideration seems to hinge on infection as its cause. My reasons for opposing this consensus judgment are as follows: (1) There is a decided advantage in climatic change over the home or the local sanitorium treatment, and (2) the germ origin of tuberculosis is not the sole cause of the disease, and so is not a sufficient foundation for either its educational or legislative control.

1. There never has been found anything more potent for actual cure than a seasonable and decided change of residence and occupation, involving, as it does, getting away from the whole of the previous environment, which, more than anything else, has originated the disease. The failure to recognize and to be guided by this truth can be reasonably attributed to the faulty consensus idea which discredits known climatic results. There is probably more variation and uncertainty in mechanical appliances and ability to diagnose the incipiency of tuberculosis than pertains in any other branch of diagnosis and therapeutics. Yet the nearer we can get to the obscure or possibly undetermined etiological factors of the disease the better can we forestall the future. Every form of treatment put forward is, of course, more successful in the incipiency of tuberculosis than when the disease is advanced. Far be it from my purpose to disparage system in management and segregation of the affected poor under proved methods of treatment in well-equipped sanatoria or hospital homes, especially if located in the most favorably situated parts of our great country. But the consensus of medical opinion does not seem to recognize the inadequacy of the consumptive hospital plan near eastern cities for the great task before us. Some sanatoria for consumptives are in a measure successful, because of two fortunate circumstances, (*a*) the men in charge of them are gifted with the requisite genius and enthusiasm, and (*b*) a practically outdoor mode of life is insisted upon as a principal factor in the régime.

The preference for high altitudes to which we, who have had experience in Colorado, are wedded rests upon our personal knowledge of remarkable results. We believe these results could not or would not occur under other and low altitude conditions, except as a rarity. Yet if we were to average the whole profession's opinion on this point we would be outvoted by those who imperfectly understand and who poorly appreciate the chief factor of our climate, *viz.*, the physical effect of the rarified air upon the lungs and heart—the pulmonary air and blood circulation. That the inactive, sedative and confined life in the lowlands has its counterpart, proportioned to the rarefaction of the air, in the active, stimulating and open life of our interior altitudes, is a plain proposition which seems to be poorly understood by the majority. They have "heard tell," but they do not see it clearly that the periphery of the body is somewhat congested in high altitudes, due to the crowding of the greater amount of air breathed into the pulmonary spaces, aided by the less pressure of the atmosphere on the surface of the body. That there is always a reciprocal relation between the blood in the thorax and the air in the lungs does not seem easy to understand according to the reasoning of the advocates of the rest cure, which seems to be the favorite method with the majority of physicians. We are, or seem to be, under a spell of uncertainty, if not of fear—a practical acknowledgment of our inability to properly cope with this lethargic disease. Since the evidence of cures, by whatever method or climatic change procured, is so generally believed to be confined to the incipiency or "first stages" of the disease, let me suggest a test suited to this period. It is recommended for the consideration of those gentlemen who come in contact with large numbers of consumptives in their capacities as organizers or governors of proposed sanatoria for large cities in the East. The trial I suggest would not only be of incalculable value to these men in the management of their institutions, but the preeminent superiority of an outdoor life in our high altitudes would thus be settled.

A Suggested Outdoor Life for Incipient Consumptives.—Let these gentlemen choose or have selected by careful physical examinations one

tenth of any 500 or 1000 consumptives who came under their notice. This choice is to be based upon the fitness of these supposedly tuberculous persons for the active outdoor life proposed, and limited to those who are on the favorable side of the breaking-down period in pulmonary tuberculosis. These 50 or 100 invalids, preferably young men, are to be under the care and control of a selected physician. If he also needs this kind of life it would not greatly matter, provided he had the initiative and enthusiasm to make his mission a success. Then a hospital-tent with one or more spring-wagons, for transporting invalidated members, should also be provided; also a commissary and cook and sufficient aid to have the party live well; also a large mess-tent which should give shelter in case of storms, and freight teams for carrying same and each one's individual luggage. Other tents might also be provided, but the main idea would be to have these young men sleep out in the open nearly all the year round. In order to do this safely I would recommend each man to have an "outfit" such as the cowboys have on the large cattle ranches in the Pan Handle of Texas.[1]

Such a movable camp could outfit from one of the cities at the eastern base of the Rocky Mountains in Colorado, and start out, say in June, expecting by easy stages, ten to twenty-five miles a day when on the move, and by prolonged campings at desirable places, to reach some southern point, as, for instance, the south slope of the mountains north of Tucson, Arizona, by the first of December. Here a winter camp for three or four months might be provided with added provisions, perhaps temporary cabins, to meet the season's requirements. After this a return north by a new route could be undertaken, including unfrequented and interesting sections of western Colorado, with the object of disbanding, say in Denver or thereabouts, the following October or November. Now, under a right personal and financial organization, and a careful and conscientious choice of invalids to make up such a party of 50 to 100, I believe the results would be better than could be produced by any other at present known system or method of treatment. From the workings of such a plan it would not be difficult to conceive how changes could be made, so that it would be possible to include the care of the more seriously ill, even to the extent of having nurses along. Again, permanent camps or ranches might be established in connection with gardening, cattle- and sheep-raising. For instance, three camps five to fifteen miles from each other might be established at different elevations to suit the winter, spring and fall, and midsummer seasons; the tents with board floors being moved from one to the other. Thus, an elevation of two to four thousand feet higher in summer than in winter could be secured. Such places, having the additional advantage of fine exposure and good water, could be found in New Mexico and Arizona, where considerable tracts of land could probably be bought very reasonably for this purpose, but these suggestions are diversions from the main object of this paper.

2. The other difficulty we have to contend with in eradicating tuberculosis is the fact of the consensus of judgment among medical men hovering so closely around the germ cause that the predisposing conditions (without which the disease could not exist) go undetected and the greatest possible success cannot be obtained. In my paper upon "The Degenerative Results of Deficient Ventilation,"[1] read at the last meeting of the American Climatological Association, I have so fully worked out the proof that we as a people are living upon a deficient ventilation curve, and that this defect in our civilization is at the bottom of our prevalent tissue degeneration and tuberculous tendency, that I may be pardoned for referring thereto for the detailed argument. The conclusion therein reached was that the healthful respirability of the air depends upon its not having been previously breathed or shut off from the revivifying influence of the sun. In other words, that the electrifying, purifying and motion-producing influence of the sun cannot be shut out from the air we breathe without a resultant vitiating effect upon the blood and tissues, in the lungs especially. Thus, the air is rendered unfit for respiration, and here is the main source of the dyscrasia or degeneration which makes the destructive activity of the germ possible. Therefore this prime evil of our civilization, the faulty construction and deficient ventilation of our animal as well as our human abodes, must enter into our calculation for the successful prevention or eradication of this disease. The necessity for this reform forces to the front the educational needs of a people so ignorant and careless, so rooted to evil habits of living, that they cannot see that there is anything wrong in our "civilized" mode of life. The need of legislation is also made plain to the end that the crowding of people into large cities may be better controlled. Legislation is needed also in order that in all new buildings, to be constructed hereafter, a more generous allotment of space may be provided per human inhabitant

[1] A "tarpaulin," which is a piece of heavy 20-ounce duck or tent cloth, 7 ft. wide and 17 ft. long; three or four warm woolen double blankets, or two blankets and two comforters ("Suggins"); a "slicker," a long rubber-cloth overcoat, cowboy hat, boots, etc.; if they can afford it each one should have his own saddle-pony, saddle and accoutrements; a half dozen rifles; a half dozen shotguns and a dozen fishing-rods, together with other accompaniments for outdoor sports and games could be added. This sleeping on the ground can be done very comfortably whether one bunks alone or combines his blankets with another's to make a double bed. In either case the blankets and comforters with tarpaulin outside can be so folded as to give a comparatively soft bed in the form of a sleeping-bag. In this the camper is covered with the soft blankets next the body, the comforters and some of the blankets underneath and the tarpaulin underneath and above all. This canvas sheet is stiff enough (especially when wet) not only to shed water, but to hold its tent-shaped position when punched up above the head. This for sleeping purposes is getting down about as near to Nature as possible, and is quite feasible and possible, at least for three-fourths of the year in this dry western country.

[1] Journal of Tuberculosis, July, 1900, and Journal of the American Medical Association, July 14, 1900.

than the former average of 1000 cubic feet, obtaining in some sections, and for milch cows 400 cubic feet, roughly estimated, as the prevailing average where tuberculosis exists among them. According to investigators who have made a special study of this subject, twice the area named, and that, too, renewed every hour, is the minimum limit for healthful living.

Yet this basic argument, this causation, which apparently alone explains the great prevalence of tuberculosis alike among animals and man, is practically nullified by the consensus of opinion of the medical profession which gravitates back, "as duck to water," to the bacillary infection as the beginning and the "whole thing" of this disease. It is now "up to" tuberculosis conventions and boards of health to see and to prove how destroying the results of this disease, through disinfection and laws prohibiting or controlling expectoration, is going to eradicate or even greatly lessen the prevalence of this disease itself.

If time and a reasonable limit of this paper permitted I would add other evidence why the consensus of judgment of medical men can settle aright no investigation which has a loophole of doubt in it. The consensus is always a compromise, and a compromise is never the whole truth. The result is a practical failure so far as a conclusive solution of the question in hand is concerned. But, like the lighthouse along a rocky and uncertain coast, the attention thus drawn to the failure of the consensus judgment may lead some one else to take the right course, and the harbor of truth will eventually be reached.

THE VALUE OF THE SCHUMBURG METHOD OF PURIFICATION OF WATER FOR MILITARY PURPOSES.[1]

By JOHN H. HUDDLESTON, M.D.,
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In March, 1897, Schumburg announced as the result of a year's laboratory work that of the many chemical disinfectants he had tested for use with drinking water bromine gave the only success. He reported that 0.06 gram of bromine kills the pathogenic bacteria in one liter of water in five minutes, and that then the bromine can be neutralized by ammonia so that a clear, tasteless and odorless water results. Resisting forms of non-pathogenic bacteria are not killed, and very hard, extremely dirty, and swamp water neutralize part of the bromine by the lime or the ammoniacal salts contained, and with such waters more bromine must be added even to the point of giving a yellowish color to the water for half a minute. The amount of bromine made by neutralizing the usual amount of bromine is only two or three grains to the liter, an amount too small to give a notable taste to the water or to effect the health of one taking it. Subsequent papers elaborated the technic of the method. Schumburg found that the bromine is best handled in a potassium bromide solution and recommended the following: ℞ Kalii bromidi, 20.00; bromi, 21.91; aquæ q. s. ad 100.00; for the bromine and for the neutralization tablets each containing sodii sulphitis, .095; sodii carb, exsic., .040; mannit q. s. Of the solution 1/5 c.c. is sufficient for one liter and is neutralized by one tablet.

Schumburg gave no experiments to support his statements but in January, 1900, Pfuhl reported in detail a series of confirming experiments. He tried water from various sources, river, pond and meadow, and added to these waters pure cultures of the cholera spirillum, the typhoid bacillus, and the staphylococcus pyogenes aureus. In certain experiments the cultures were not entirely destroyed, but in every such instance Pfuhl attributed the failure to the unusual severity of the test and to the insufficient amount of bromine employed. He noted that it is necessary for the bromine to be well mixed by stirring with the water, that the neutralizing salts should be dissolved in water freed from infection before they are added, that when the composition of the water to be tested is unknown it is safer to add sufficient bromine to give the water a yellow color for two or three minutes, and that as the bromine solution diminishes in strength very rapidly after the containing vessel is opened it is necessary after five minutes to increase the amount of solution used. The bromine method is practically useless when the water contains fecal matter in large enough amount to cause color, turbidity or foul smell; in other words, in conditions in which the water would naturally be rejected without question.

Such claims for a practical method of disinfection surely merit investigation, and a number of experiments with the bromine solution have therefore been performed by the writer. For part of these experiments cultures of the typhoid bacillus have been used from three sources; one was received from Pfeiffer in 1896 which had been continued in his laboratory for some years; one was isolated from well water in 1896, and the third was isolated from the feces of a typhoid patient in the fall of 1899. After it was found, however, that there was no difference in the way these reacted to the disinfectant, only the third culture was used. As the cholera spirillum had apparently been quite thoroughly tested by Pfuhl, and as it had appeared less resistant to bromine than the typhoid bacillus, it was not used in these experiments. Its place was taken by a culture of the bacillus coli communis. In all cases a forty-eight-hour culture was used; generally an agar culture was mixed with water and some cubic centimeters of this mixture were added to the water to be tested, but in a few instances a cubic centimeter of a bouillon culture was used instead.

[1] Read at the annual meeting of the Association of Military Surgeons of the United States, New York, 1900.

In the early experiments one cubic centimeter of the water under examination was taken for a test, added to a tube of melted agar, plated in a Petri dish, and placed in an incubator at 37° C. for forty-eight hours. In case no growth was apparent twenty-four hours more were allowed to elapse before the plate was rejected. As it was later found that bromine has but slight effect on the usual saprophytes, large numbers of colonies of spore-bearing bacilli often being found in the media, and as it was feared that a few colonies of typhoid might escape notice, recourse was had to the Hiss tube media. Stick cultures were made from the suspected water and controls from the typhoid culture employed. If the medium was not clouded at the end of twenty-four hours it was inferred that the typhoid bacillus was absent. In a few instances the Hiss plate medium was also used. Coli plates were controlled in like manner by planting colonies and in some instances a cubic centimeter of the water in fermentation tubes. If no gas appeared it was inferred that the bacillus coli communis was certainly absent; if gas developed at least one of the colon group was probably present.

Water from three sources was used: Croton water drawn from the tap in the laboratory, Albany water taken from the Hudson River, and stagnant water taken from a pool which had been standing some weeks in a city lot in Harlem. Sterile Croton water mixed with fresh urine in varying proportions was also used for the experiments. The three waters were examined for their hardness, and it was found that the Albany water was represented by 3.9 grains of calcium carbonate to the imperial gallon, the Croton water by 7.7 grains, and the stagnant water by 11 grains. The Croton water contains .0030 parts of free ammonia and .0170 parts of albumenoid ammonia to 100,000 parts of water and the corresponding figures for the stagnant water were found to be .0298 parts of free ammonia and .0183 parts of albumenoid ammonia. In other words, the stagnant water was very hard, contained a large amount of ammonia, and would have been rejected immediately for drinking water even if it had not had in addition a notably bad odor.

The time of exposure of the water to the bromine varied in the different experiments from five to seven and a half minutes.

In the first series of 25 experiments the variants especially observed were the different cultures of typhoid and the varying amounts of bromine solution. In every case 500 c.c. of Croton water was used, and the bromine solution was so diluted that 10 c.c. of the dilution represented 1/5 c.c. of the original mixture.

In specimen No. 1 the water was filtered through porcelain; in No. 2 it was boiled and exposed; these two served as controls. Nos. 3 to 17, inclusive, were simply filtered; Nos. 18 to 25 were boiled and exposed. To all of these save Nos. 16, 17, 18, 19 and 20, in which bacillus coli communis was used, typhoid bacilli derived from three sources were added. To Nos. 7 to 25 bromine solution in amounts varying from 1/10 to 1/5 c.c. was added. They were then all plated on agar with the following results. Those samples of filtered water and of boiled and exposed water to which no bromine had been added showed the presence of innumerable colonies of the organism planted. The rest of the filtered water to which the bromine had been added showed no growths; in all of the specimens of boiled and exposed water, notwithstanding the addition of the bromine, a few saprophytes grew, but no colonies of either typhoid or coli were found.

It was inferred that none of the cultures of typhoid employed offered unusual resistance and that for ordinary drinking water the minimum amount of bromine solution proposed by Schumburg is sufficient to disinfect typhoid and coli while the ordinary air bacteria may be much more resistant.

In the second series other waters were used and the bromine solution was weaker. The solution had been kept for some time in a glass stoppered bottle, but the odor of bromine showed that some had escaped, though unfortunately no analysis was made to determine the loss. As before the bromine was diluted so that 10 c.c. were the equivalent of 1/5 c.c. of the original.

TABLE I.

No. of Experiment.	Water.	Preparation.	Amt. in c.c.	Ty. Pfeiffer added.	Ty. 138 added.	B. col. com. added.	c.c. Br. sol. added. 10—5 c.c. org. sol. (1)	Culture Medium.	Result.	Remarks.
1	Albany	None	100	..	..	..	0	Agar	S many	Control
2	"	"	"	..	..	..	1	"	S fewer	"
3	Stagnant	"	"	..	..	..	0	"	S immense Number	"
4	"	"	"	..	..	+	1	"	S "	"
5	Albany	"	"	+	..	..	0	"	S + T +	"
6	"	"	"	..	+	..	0	"	S + T +	"
7	"	"	"	..	..	+	0	"	S + C +	"
8	"	"	"	+	..	..	10 kept vel-low 5 min.	"	S + T o	62 Col
9	"	"	"	..	..	+	" "	"	S + C o	37 Col
10	Stagnant	"	"	..	+	..	" "	"	S + T o	1 Col
11	"	"	"	..	..	..	" "	"	S + C o	25 Col

NOTE.—S—saprophyte; T—typhoid; C—coli.

It was apparent that a larger amount of a more dilute solution of bromine is an efficient germicide; and it was clear that some means must be adopted to determine positively the presence or absence of a few colonies of typhoid and coli. In the next series, therefore, the Hiss tube media for the determination of typhoid and fermentation tubes for the determination of coli were adopted. The bromine solution was diluted so that 50 c.c. were the equivalent of 1/5 c.c. of the original.

TABLE II.

No. of Experiment.	Water.	Preparation.	Amt. n c.c.	Ty. 138 added.	B. col. com. added.	c.c. Br. sol. added. 50 = 1 c.c. org. sol.	Culture Medium.	Result.	Remarks.
1	Croton	None	100	..	..	0	Agar	S	Control
2	"	"	"	..	..	5	"	S fewer	"
3	Stagnant	Filtered, 3 filter papers	"	..	..	5	"	S +	"
4	"	" " " "	"	+	..	0	"	S + T +	"
5	"	" " " "	"	..	+	0	"	S + C +	
6	Croton	None	"	+	..	5	"	S + T o	
7	"	"	"	+	..	5	Hiss tube	S + T o	
8	"	"	"	+	..	8	" "	S + T o	
9	"	"	"	+	..	10	" "	S + T o	
10	"	"	"	..	+	5	Agar	S + C o	
11	"	"	"	..	+	5	" and ferment tube	S + C o	
12	"	"	"	..	+	8	" " " "	S + C o	
13	"	"	"	..	+	10	" " " "	S + C o	
14	Stagnant	"	"	+	..	5	"	S + T ?	
15	"	"	"	+	..	5	Hiss tube	S + T o	
16	"	"	"	+	..	10	" "	S + T o	
17	"	"	"	+	..	35	" "	No growth	
18	"	"	"	..	+	5	Agar and ferment tube	S + C +	
19	"	"	"	..	+	10	" " " "	S + C o	
20	"	"	"	..	+	50	" " " "	No growth	
21	"	Filtered, 3 filter papers	"	..	+	5	" " " "	S + C +	
22	"	" " " "	"	..	+	10	" " " "	S + C o	
23	"	" " " "	"	..	+	15	" " " "	S + C o	
24	"	" " " "	"	+	..	5	Hiss tube	S + T o	
25	"	" " " "	"	+	..	10	" "	S + T o	
26	"	" " " "	"	+	..	15	" "	S + T o	

The Hiss media and the fermentation tubes proved satisfactory means of determining the test cultures, the only doubt arising in No. 14, in which neither was used, and it was shown that sufficient bromine could prevent growth of even the saprophytes in the stagnant water. A series of experiments was then executed to learn the amount of urine contamination necessary to make the bromine method unreliable, and fresh urine was added to sterile Croton water in the proportions of 2, 5, 10 and 40 per cent. These mixtures of urine were then infected with typhoid and coli, and exposed to varying amounts of the same bromine solution as before.

Experiments 13 to 17 inclusive were further controlled by adding 1 c.c. of the water to Hiss plate media and examining the resulting plate microscopically, and even with that considerable amount of water no typhoid colonies were discovered. The colon bacillus proved somewhat more resisting than typhoid, but it was clear that this method of disinfection is perfectly applicable

TABLE III.

No. of Experiment.	% of urine in Sterile Croton.	No. of c.c.	Ty. 138 added.	B. col. com. added.	c.c. Br. sol. added. 50 = 1 c.c. org. sol.	Culture Medium.	Result.	Remarks.
1	40	100	+	..	0	Hiss tube Agar plates	Cloudy S + on plates	Control
2	40	"	..	+	0	Ferment tube " "	Gas S + on plates	"
3	40	"	+	..	20	Hiss tube " "	S + T +	
4	40	"	..	+	20	Ferment tube " "	S + C + gas	
5	10	"	+	..	0	Hiss tube " "	S + T +	Control
6	10	"	+	..	10	" " " "	S + T +	Of 2 Hiss tubes, one cloudy, 1 c
7	10	"	+	..	12	" " " "	No growth in either	
8	10	"	+	..	15	" " " "	S + T o	Plate contaminated
9	10	"	..	+	0	Ferment tube " "	S + C + gas	Control
10	10	"	..	+	10	" " " "	S + C + "	12 Colonies
11	10	"	..	+	12	" " " "	S + C + "	13 "
12	10	"	..	+	15	" " " "	S + C +	5 "
13	5	"	+	..	0	Hiss tube, Hiss plate " "	S + T +	Control tube cloudy pl. hd. ty. co
14	5	"	+	..	5	" " " "	S + T o	Tube clear & no T. col. on plate
15	5	"	+	..	8	" " " "	S + T o	" " " " " " " "
16	5	"	+	..	10	" " " "	S + T o	" " " " " " " "
17	5	"	+	..	12	" " " "	S + T o	" " " " " " " "
18	5	"	..	+	0	Ferment tube " "	S + C + "	Control
19	5	"	..	+	5	" " " "	S + C + "	5 Colonies
20	5	"	..	+	8	" " " "	S + C + "	2 "
21	5	"	..	+	10	" " " "	S + C o	3 "
22	5	"	..	+	12	" " " "	S + C o	2 "
23	2	"	+	..	5	Hiss tube " "	S + T o	4 "
24	2	"	+	..	8	" " " "	S + T o	6 "
25	2	"	+	..	10	" " " "	S + T o	21 "
26	2	"	+	..	12	" " " "	S + T o	12 "
27	2	"	..	+	5	Ferment tube " "	S + C o	9 "
28	2	"	..	+	8	" " " "	S o C o	No growth
29	2	"	..	+	10	" " " "	S o C o	" "
30	2	"	..	+	12	" " " "	S + C o	3 Colonies

to water in which there is not more than 2 per cent. of fresh urine.

TABLE IV.

No. of Experiment.	Water.	No. of c.c.	Ty. 138 added.	B. col. com. added.	c.c. Br. sol. added.	Culture Medium.	Result.	Remarks.
1	1/5 Stagnant 4/5 Croton	10,000	+		0	Hiss tube	Clouded	Control
2	1/5 Stagnant 4/5 Croton	10,000	+		4	Hiss tube	Not cld.	
3	Croton	10,000		+	0	Fermen. tube	Gas pro.	Con.
4	Croton	10,000		+	4	" "	No gas	

Two controlled experiments were made with larger amounts of water and undiluted bromine solution and the results were the same as with smaller amounts.

To learn something of the effect of the treatment on the taste of water a series of glasses was prepared with Croton water, and water treated with amounts of the bromine solution and neutralizer varying from the normal amount proposed by Schumburg to five times that amount, and this series was tasted by six persons with the result that some of the series tasted a little either "salty" or "earthy" or, as several said, like "stale Congress" or Vichy.

The experiments performed, therefore, have given results quite in accord with those of Schumburg and Pfuhl. The failures have emphasized some of the limitations of the method without discrediting it, and to one having in mind the typhoid bacillus as the one the destruction of which is particularly desirable the results are most encouraging. The method is not one which may be expected to make cesspools or even puddles drinkable, though it was shown that if sufficient bromine is added it is possible to make even the stagnant water under experiment sterile. That water which has become infected with typhoid, but which is otherwise good drinking water, may by this means be made a safe source of supply would seem to be demonstrated. The occasions on which just this is desirable are numerous. Schumburg suggests, as notable instances, barracks and camps in infected localities and vessels taking on water at suspected ports. As to the practicability of the method it may be said that, most important of all, it is rapid, and furthermore that the solutions are easily made and not expensive. Bromine retails at from sixty-five to seventy-five cents a pound. The solution must be kept in sealed vessels and preferably in vessels which hold just the amount to be used for the special emergency. Schumburg has devised a military pouch, like an orderly pouch, intended to serve for the preparation of a day's supply of water for a regiment of twelve hundred men. The pouch contains tubes of the bromine solution, neutralizing salts, measuring vessels and stirrers and weighs about four pounds. A sergeant requires one tube of solution and one tube of salt for his company, empties each into a liter of water, and gives 10 c.c. of the bromine water to every soldier as he files past carrying a liter of water. The soldier stirs the solution for five minutes, and then filing by again receives the proper amount of the salt solution and in two minutes more the water is fit to drink.

In conclusion I wish to express my obligation for kind advice and assistance from Drs. W. H. Park and R. J. Wilson and for chemical analyses performed by Mr. J. P. Atkinson.

A THEORY OF THE PHYSIOLOGY OF SPINAL ANESTHESIA.

By H. H. STONER, M.D.,
OF ROCK RAPIDS, IA.

Now that anesthesia of the lower half of the body by means of a solution of cocaine thrown into the lumbar division of the subarachnoidean space is claiming the attention of surgeons and obstetricians the world over, a few words as to the probable physiological process by which it is brought about may not be out of place.

The term "medullary narcosis," so often used, is misleading, inasmuch as it gives the impression that the injection is made into the substance of the cord (a procedure which would certainly be fraught with much danger), whereas the solution is thrown into the subarachnoidean cavity some distance below the termination of the spinal cord.

During fetal life the spinal cord fills the entire spinal canal from the first cervical to the last sacral vertebra. But somewhat prior to and immediately after birth the rate of growth of the vertebral column is so much greater than that of the spinal cord that the lower extremity of the latter recedes up the canal, stretching, as it were, the nerves which have already pierced the bony foramina, so that by the time the individual has obtained his growth a cavity is left behind at the bottom of the spinal canal extending from the first lumbar to the first sacral vertebra, occupied only by the elongated roots of the lumbar and sacral nerves, known as the cauda equina, and the cerebrospinal fluid. It is into this cavity that the solution is injected.

While it is true that histologists are not unanimously agreed as to the method of conduction of stimuli from one neuron to another, the consensus of opinion, I believe, is that a functional approximation is effected between the arborizing extremity of the axone of one and the dendritic processes of the other. By means of such approximation a stimulus is enabled to pass readily through the various neurons composing a nervous tract and so reach its destination. This theory assumes that the arborizing extremities of the axones of neurones are endowed with certain mobile properties which enable them to make or break their connection with their associated neu-

rones. It is claimed that an impulse upon reaching these terminal filaments sets them to vibrating, and during the oscillation they come into contact with the dendritic processes of the associated neuron and so transmit the impulse to it. That they do possess a limited power of motion can hardly be doubted, and if so, and the movement is as above indicated, the physiology of spinal anesthesia is easily explained. The storehouse of the energy of a neuron resides in its cell-body. To its reticulated meshwork is accredited its mobile qualities; therefore any interference with the internal economics of the cell must necessarily interfere with its working capacity.

The studies of Nissl, Lugaro, Brauer and many others, concerning the effects which poisons introduced into the system have upon the cytological structure of the nerve-cells, show that these bodies become profoundly modified. Thus the tigroid bodies (the stainable portion of the cell) break up and in part or wholly disappear and are replaced by a dust-like substance, evidently the detritus left after the breaking-down of the cell. Such changes, of course, are permanent. But if continued intoxication leaves in its track such permanent results, is it not rational to suppose that a temporary intoxication would for the time being expend its energy upon the same structures that suffer from a prolonged intoxication? As that part of the neuron upon which its mobile qualities depend is in part affected by toxic agents, it follows that as the result of such morbid processes its capacity for transmitting impulses from one to another would be seriously inhibited; for the gap normally existing between them could not be closed owing to the paralytic condition of the arborizing fibrils, and the means for the conduction of its impulses from one to another would be effectually cut off. That cocaine is an active poison in the sense here used, and that in some way it transiently modifies the cytological structure of the neuron, none will deny.

Just what the modification is, or where it takes place, we cannot with certainty say; but the inference is that, like all other poisons investigated, it takes place within the body of the cell and is of such a nature as to paralyze the activities of its arborizing processes. In such an event sensory stimuli would fall short of the psychic precincts and consequently no sensation would be elicited.

It is well known that the sensory tracts are composed of at least three distinct neurons, *viz.*, the peripheral, intermediary and central sensory neurons. The peripheral neuron, beginning in the sensitive surface, passes up through the cord to the medulla where its arborizing axone terminates in functional relation to the dendritic processes of the intermediary neuron; this in turn passes to the thalamus, where it has a like relation to the central neuron; this last named neuron proceeds from the thalamus to the cerebral cortex, ending there among the elements implicated in the manifestation of psychic phenomena. Now, it is clear that, if the arborizing processes of the peripheral sensory neurons from any cause become paralyzed to such a degree as to inhibit their mobile capacity and prevent their approximation with the dendritic processes of the intermediary neurons, a functional relation between the two could not be effected, consequently sensory impulses could proceed brainward no further than the meeting-place of these two neurons in the medulla, and, of course, no sensation would be aroused. This, I take it, is what occurs when a solution of cocaine is thrown into the subarachnoidean cavity. The toxic effect of the cocaine upon the working structure of the cell-body being such for the time being as to completely destroy its tonicity, the arborizing extremity of its axone therefore retracts out of functional relation to its associate, and it becomes an entity existing wholly within itself.

In what way does the poison gain access to the cell-bodies? Of course, it cannot be by direct injection or infiltration into their substance, for they are situated, outside of the canal, in the spinal ganglia. The most plausible theory is that the axones, occupying the cavity into which the solution is thrown, absorb it and transfer it by way of their vascular supply back to the cell. It is noteworthy that the neurons most profoundly affected by the solution are those that go to make up the cauda equina. A portion of the nerve here lies exposed, as it were, and floats in the cerebrospinal fluid which is impregnated with the poison. After they pierce the cord they are protected by its substance and investing membranes. That the potency of the agent should be greatest at the point of injection, where the solution for a time is strongest, is to be expected and is borne out by clinical experience; and that the solution as it becomes diluted by the spinal fluid should exercise an effect higher up in the cord should also be expected and is borne out by clinical experience. The stronger the solution injected the more pronounced are its manifestations upon nerves located higher up in the cord. That is what we should further expect. The after-effects, such as dizziness, nausea, sweating and headache are no doubt manifestations of the effects of a much-diluted solution upon the cortical neurons of the cerebral hemispheres. The effect of the diluted solution falls short of paralyzing their processes, but instead gives rise to the symptoms enumerated. These symptoms continue in diminishing degree until all the poison is eliminated from the system.

The question now arises, Why do the motor neurons escape the paralyzing effect of the solution? It would be reasonable to suppose, if the functional capacity of a sensory neuron should be inhibited by the absorption of a cocaine solution, that the motor neurons occupying a site alongside of the sensory ones should likewise share in the functional derangement. But clinical experience proves this not to be the case. The

motor neurons, the axones of which pass through the cauda equina, apparently go on performing their function of transmitting motor impulses unmindful of the presence of the toxic agent. It must not be supposed that these neurons are unaffected by the solution. The cytological structure of their cells certainly undergoes the same morbid change as do those of the sensory neurons, but, owing to the direction of the motor current and the relation of the end plates of the peripheral motor neurons to the muscle fibers, their capacity for transmitting motor stimuli to their destination in the muscle is not seriously handicapped. A motor tract, as is well known, is composed of a central and a peripheral neuron, also that the junction of the two takes place in the anterior horn of the cord; therefore the peripheral motor neuron only is affected by the toxic agent. Stimuli over the sensory tract are prevented from reaching their destination owing to paralysis and withdrawal of the arborizing extremity of the peripheral sensory neuron from contact with its associated one, but in the case of the peripheral motor neuron no such ending takes place.

These neurons terminate in end plates by anastomosis with muscle fibers, consequently they cannot retract out of functional contact with the muscle, and any impulse which reaches this neuron must expend its energy upon the muscle fiber with which it is connected. The relation of the end plate of the neuron to the muscle fiber is such that it cannot be broken. The central motor neuron arising in the cerebral cortex and ending by its arborizing extremity in functional relation to the dendrites of the peripheral one is not in any way influenced by the cocaine solution, so that motor impulses may traverse the motor tract from brain to muscle unimpeded.

Why the reflexes are abolished in the anesthetic areas is also patent. The reflex mechanism of the cord is as follows: Immediately upon entering the cord the axones of the sensory neurons divide into two branches, one ascending and the other descending. From the descending branch a collateral is given off, the arborizing extremity of which terminates in functional relation to the dendrites of the peripheral motor neuron. In the natural state of these organs a sensory stimulus upon entering the cord may take one of two directions, or it may disperse and take both.

A portion may pass up the ascending branch, and upon reaching the brain give rise to sensation, and the other portion may take the reflex route over the descending branch and its collateral to the cell of the peripheral motor neuron, in which event a reflex action is excited. Now, it goes without saying that the solution paralyzes the arborizing processes of this collateral branch as well as those of the ascending branch, and such being the case it is withdrawn from functional relation to the peripheral motor neuron and reflex activities are thereby inhibited.

MEDICAL PROGRESS.

Dry Sterilized Catgut Ligatures.—J. H. Carstens (*Am. Jour. Obstetrics*, Nov., 1900) says that he has tried all the different kinds of catgut ligatures and has always found something wrong. The greatest objection he found to all these ligatures was that they lasted too long. After many experiments the writer prepared a dry sterilized catgut ligature as follows: The catgut is put into ether for a few days to remove all fat, and then cut into 18-inch lengths. Three 18-inch lengths are wrapped together in tissue paper. This is put into a small envelope, which is then sealed and placed in the Boerckman sterilizer and subjected to dry heat for three hours. The thermometer in the apparatus will show that the heat is at least at 300° F. After three hours the heat is shut off and the ligatures remain undisturbed in the apparatus for from twelve to eighteen hours to give opportunity for any spores to develop. Then the heat is again turned on for three hours at 300° F. The ligatures are now sterile. They are in an envelope and can be carried in a satchel. When a ligature is desired the end of the envelope can be torn off, the ligatures wrapped in tissue paper dropped into alcohol, the tissue paper removed, and the ligature threaded and used. These ligatures are never slippery, the knot never slips, they soften and liquefy and are absorbed in a week or ten days if not contaminated. Repeated tests have always found these ligatures sterile. The points Carstens makes about the dry sterilized catgut ligatures are: (1) All buried sutures ought to be absorbable. (2) All absorbable ligatures must be absolutely sterile. (3) Chemicalized sutures are no more sterile than plain sutures. (4) A suture that is chemicalized is harder and remains longer in the tissues. (5) This latter is no advantage, but a disadvantage. If in any case it is desirable that a suture should remain longer, use dry sterilized kangaroo tendon.

Clinical Characters of Tremor.—Tremor is often an important diagnostic point in arriving at a proper conclusion in regard to the nature of disease and is so easily observable that its value should be appreciated. R. F. Williamson (*Med. Chron.*, Oct., 1900) reviews the peculiarities of the common forms and says that it is important to note what part is affected, whether the tremor persists when the limb is at rest and whether it is increased, diminished, or arrested by voluntary movements. The influence of mental emotions, etc., should also be tested. Tremor is an important symptom of paralysis agitans. It is unilateral at first and then becomes bilateral. The movements are usually most marked in the thumb and finger, causing a flexion and extension, or pill-rolling movement. It is usually most marked during repose and either ceases entirely or is greatly diminished by voluntary movements. The handwriting is therefore affected later. Other characteristics of the disease appear, as the pe-

culiar attitude of the body, the muscular inertia and rigidity, the fixed facial expression, etc. In disseminated sclerosis tremor appears only on voluntary movement, and hence is called intention tremor. It consists of coarse, jerky oscillations, brought out more distinctly by efforts to perform fine, slow actions. Attempts to drink a glass of water frequently give typical results. The handwriting is affected early and the letters are extremely jerky and irregular. Muscles of the whole arm become involved and sometimes those of the head or the entire body. In alcoholism the tremor occurs, not only in the hands, but in the face, lips, tongue and perhaps the legs. The tremor is fine, rapid, not confined to the hands or fingers, increased by voluntary movement and often chiefly lateral when the arm is extended. In writing the letters are wavy and irregular, but not so marked as in disseminated sclerosis. The senile, asthenic, simple and hysterical tremors usually occur during repose, but are much greater during voluntary movement. The clinical history of the case assists diagnosis materially.

Suprarenal Gland in Hay-Fever.—Contrary to the favorable results Solis-Cohen obtained in hay-fever from the administration of suprarenal gland by the mouth, Lewis S. Somers (*Phila. Med. Jour.*, Dec. 8, 1900) reports 21 cases in which the results were not entirely satisfactory. These patients varied in age from seventeen to fifty-six years, and received the suprarenal extract exclusively for periods varying from one to six weeks each. Ten of the patients were obliged to discontinue the suprarenal tablets after a week's trial because of disagreeable symptoms, while 7 of them used them continuously for six weeks. Tablets of 5 grains each were found to be the best form in which to administer the drug, as they did not produce as much nausea as the glycerin solution did. A five-grain tablet was given every two hours except in those cases in which it produced disagreeable symptoms, when the same dose was given every four hours, from 15 to 75 grains being taken daily. The nasal symptoms were but slightly affected, the sneezing attacks were apparently less frequent, but no less severe than formerly. The nasal stenosis was favorably affected in about one half of the cases, the turbinals being diminished in size. The pruritis of the chin and buccal mucous membrane was less when the tablets were dissolved in the mouth, but not when they were swallowed. All those patients who had had asthmatic symptoms, during the hay-fever season only, were unfavorably influenced. The paroxysms became more frequent and more severe while the suprarenal tablets were being taken. In 5 cases which had never had asthmatic attacks they appeared while the drug was being taken and disappeared when it was withdrawn. The effect of the drug was more satisfactory when the tablets were allowed to dissolve upon the tongue than when they were swallowed. In the latter case there were little or no appreciable results obtained. The chief disagreeable symptoms noted were nausea, a sense of chest-constriction, and the development of asthma or the augmentation of the paroxysm when it already existed. Somers does not think that the favorable results obtained were of sufficient magnitude to recommend its use for this purpose. Locally, he considers suprarenal extract of great service, but, internally, he considers it of little or no use in the treatment of hay-fever either with or without conjoined treatment.

Abortive Treatment in Gonorrhea.—C. Kopp (*Münch. med. Woch.*, Nov. 27, 1900) recommends that after every suspected coitus, the meatus and fossa navicularis of the urethra be thoroughly rubbed with a small piece of cotton on a sound and that a few drops of a two-percent. solution of silver nitrate or of twenty-percent. protargol-glycerin be brushed over the same area. The inflammatory reaction which follows is but slight and lasts only a few hours. He has been able to abort the disease twelve hours after the infection.

Pleomorphism in Bacteria.—E. Schwalbe (*Münch. med. Woch.*, Nov. 20, 1900) discusses the interesting question whether it is possible, by different methods of culturing, to change one variety of bacteria into another. The term pleomorphism has been wrongly applied to such bacteria which assume different forms during their cycle of development; thus, the bacillus subtilis at different times appears as rods and again as threads. An illustration of the term, in its more proper restriction, is afforded by the tubercle bacillus, or more properly, fungus. It has been possible by inoculating it into cold-blooded animals to considerably alter its morphological and biological characteristics so that really a new variety results. It has been known for some time that most pathogenic germs may be rendered avirulent by growing them on artificial media and more recently it has been found that a certain chromogenous bacterium, the staphylococcus pyogenes aureus, can produce colors of different shades after proper manipulation. While artificial cultivation may thus result in the formation of different sub-classes, the evidence that one distinct class may be converted into another is not forthcoming.

Causes of Insanity.—On account of the inability to discover organic changes in the brains of so many insane persons and on account of the indefinite and varied character of the structural lesions when they are found, innumerable pathological conditions in other portions of the body have been suggested as of sufficient influence to cause the abnormal manifestations of the brain. M. D. Jones (*Med. Rec.*, Dec. 15, 1900) discusses at considerable length and analyzes a number of cases to show the relation of the sexual function to insanity. She believes that since ovulation and generation are normal functions, disease of

the genital organs in woman may be the source of great irritation and may even cause such exhaustion and prostration as to produce extreme nervousness and even mania and insanity, but that these abnormal mental conditions can occur only in those who have some neurosis, brain lesion or inherited tendency thereto. As causes of insanity she lays especial stress upon the influence of heredity which is generally acknowledged as an efficient factor. The abuse of alcohol is another prolific cause and has been found to be largely responsible for at least twenty-five per cent of cases admitted to certain hospitals. Its deleterious effects are exerted not only upon the person using it, but also upon the mental and physical development of the offspring, especially if begotten while the parent is in a state of drunken stupor. The condition of other organs of the body, the stomach, intestines, the circulatory and respiratory systems, all have their influence, and, perhaps, as much so as the genital organs, in causing insanity among those who are mentally weak or are predisposed to mental abnormalities.

THERAPEUTIC HINTS.

Ovarian Pain.—An excellent combination is

℞ Potass. bromid..... 1.0 (gr. xv)
Chloral hydrat..... 0.8 (gr. xij)

given at intervals of four hours.—*Macnaughton-Jones.*

Muscular Rheumatism.—Severe and acute forms, writes J. M. Anders, require anodyne and hot applications, and opiates. Hot fomentations, the Turkish bath, hot-water bag, hot-water sponging, or dry heat by bags filled with salt or hops, promote comfort, and, if begun early, may abort the attack. The affected muscles, especially in torticollis, may be covered with flannel and a warm flatiron passed over for a few minutes. For lumbago, sterilized needles, 3 or 4 inches long, are inserted at the seat of pain, and withdrawn after five or ten minutes. Blisters have not proven of value. In subacute and obstinate cases a twenty-per-cent. salicylic-acid ointment may give good results. Active friction with anodyne and stimulating liniments, massage, and electricity are worthy of trial. In all cases antirheumatic remedies are to be employed, and, if chronic, potassium iodide guaiacum, and small doses of arsenic may be added. The nutrition and general health must also be looked after.—*Practice of Medicine.*

Acute Pneumonia.—The severe pain at the onset, write Fowler and Godlee, is probably due to the stretching of the inflamed pleura by the engorged lung. It may be relieved by an ice-bag, but leeches or a large linseed poultice are preferable. The poultices should be changed every two or three hours. In lieu of these the affected side may be covered with a layer of cotton-wool heated at the fire and sprinkled with a stimulating liniment. When the poultices are discontinued a cotton-wool jacket should be worn. Rest must be absolute, and at the onset will be promoted by morphine, 0.01-0.015 (gr. 1/6-¼), repeated once if necessary. Later in the disease morphine is dangerous. Calomel, 0.2 (gr. iij), should be given early, and followed by an aperient. The functions of the skin must be maintained by citrate of potash, acetate of ammonia, and quinine, 0.06-0.2 (gr. j-iij), every four hours. Aconite and tartar emetic are depressant and harmful. The diet may consist of two pints of milk and a pint of beef-tea in twenty-four hours. Diminish this quantity if the stomach is at all distended. Sponging the surface of the body with water at 80° F. is grateful to the patient, lowers temperature, relieves restlessness, and promotes sleep, yet it has little, if any, effect on the course of the disease. For temperatures of 105.8° F. or over, the ice-cradle or ice-pack may be used. Oxygen, digitalis, and ammonium carbonate must be employed early to ward off cardiac failure, and when this supervenes, brandy, even up to twenty ounces a day, should be given. The patient must be carefully watched, for harm may be done by over-stimulation of a weak heart. Strychnine and caffeine are valuable heart tonics. Nothing is so useful as morphine for violent delirium or hiccough. Cyanosis, epigastric pulsation, prominence of the jugular veins and a small, irregular pulse are indications for venesection. Balfour advocates

Chloral ..... 0.7 (gr. x)
Infus. digital..... 15.0 (℥ ss)

every four hours during the period of pyrexia. For delayed resolution the syrup of iodide of iron may be given with quinine.—*Diseases of the Lungs.*

Treatment of Vulvar Papillomata.— Each papilloma can be separately cured in from 5 to 8 hours. Use this solution:

Acid. salicylic ..... 2.0 (grs. xxx)
Collodion flexible .... 5.0 (grs. lxxv)

Apply some drops of this solution on 8 or 10 papillomata at the same treatment. The next day apply some to eight or ten others and repeat the application to the first group. Continue this treatment until they all disappear.

Or, paint with a brush dipped in:

Acid. acetic ..... 30.0 (℥viiss)
Acid. salicylic ..... 2.0 (grs. xxx)

After each cauterization, powder with this mixture:

Tannin .... 15.0 (℥iv)
Salol ..... 10.0 (℥iiss)
Bismuth subnitrate ..... 20.0 (℥v)

If the papillomata are very large, remove with a sharp curette and then cauterize with the thermo- or galvanocautery.— *Jour. de Méd. de Paris.*

Urethral Chills.—To ward off chills following internal urethrotomy or the use of sounds:

℞ Morph. sulph.... 006 gm. (gr. 1/10)
Tinct. aconiti.... .15 cc (♏ ij)
Ol gaulther.....1.0 cc. (♏ xv)

Pharyngitis.—Inflammation of the pharynx and tonsils, writes J. V. Shoemaker, is lessened by belladonna, and this may well be combined as follows:

℞ Potass. chlorat..... 0.5 (gr. lxxv)
Tr. aconiti..... 1.0 (♏ xv)
Tr. belladonnæ..... 2.0 (♏ xxx)
Ac. hydrochlor. dil... 6.0 (ʒ iss)
Infus. rhois glabræ
q. s.....ad. 120.0 (ʒ iv)
Sig.: Tablespoonful every third hour.
—*Materia Medica and Therapeutics.*

Catarrhal Jaundice.—

℞ Mangani oxid..... 2.0 (ʒ ss)
Res. podophylli..... 0.13 (gr. ij)
Ext. belladon..... 0.065 (gr. j)
M. ft. capsul No. X. Sig.: One three or four times a day.
—*Shoemaker.*

Obstinate Constipation.—To overcome fecal impaction and in the constipation of lead poisoning give:

℞ Magnes sulph..... 8.0 (ʒ ij)
Morph. sulph..... 0.065 (gr. j)
Aq. menth. piper.....ad. 90.0 (ʒ iij)
Sig.: A tablespoonful every two hours.
—*Shoemaker.*

Régime in Rest Cure.—7.30 A. M.—Glass of milk, hot or cold, predigested, boiled or raw. 8 A. M.—Sponge patient with tepid water, or alternate hot and cold water, the body being well wrapped in a blanket except the part being bathed. Dry with a rough towel with friction. 8.30 A. M.—Boiled, poached, or scrambled eggs, milk toast, water toast, or finely cut mutton-chop or chicken. 10 A. M.—Massage for half to one hour. 11 A. M.—Glass of milk, milk-punch, or egg-nogg. 12 M.—Read for one hour. 1 P. M.—Small piece of steak, rare roast beef, consommé soup, mutton broth, and an easily-digested and well-cooked vegetable. 3 P. M.—Electricity to individual muscles. 4.30 P. M.—Glass of milk, milk-punch, or egg-nogg. 6.30 P. M.—Buttered toast, milk, curds and whey, or plain custard, no tea or coffee. 9.30 P. M.—Glass of milk or milk-punch.—*Hare in "Practical Therapeutics."*

Acute Laryngitis.—Early in attack, says G. M. Lefferts, apply ice bag or Leiter's coil to neck, and swallow ice. If this does not abort, apply warm compress, give hot demulcent drinks and warm milk and seltzer, and frequent inhalations of steam medicated with tinct. benzoin comp. or paregoric, 4.0 to 500.0 (ʒj-0j) of water. As the inflammation subsides insufflate with equal parts of starch and tannin or alum, or use a spray of zinc sulphate, 1.0 to 30.0 (gr. xv-ʒj), or the tincture of iron chloride, 2.0 to 30.0 (ʒ ss-ʒ j). Continue this for at least two weeks. Keep nasopharynx clean by sedative and astringent sprays, give aconite internally, and compressed tablets of ammon. chlorid, chlorate of potash, cubebs, etc. At the outset a laxative and expectorants may be given, and aconite, belladonna, or codeine. If edema supervenes either scarification, intubation, or tracheotomy is required.

Chronic Rheumatism.—Liniments are of value because they relieve pain and do good to the parts either through their own virtues or on account of the rubbing, and because they give the patient something to do or have done. Useful formulæ are:

℞ Tinct. aconiti..... 8.0 (ʒ ij)
Tinct. opii.....30.0 (ʒ j)
Ol. terebinth.....30.0-60.0 (ʒ j-ij)
Lin. saponis q. s.....ad 240.0 (ʒ viij)
Sig.: Poison! Use three times a day.
or
℞ Aq. ammon. fort.....15.0 (ʒ ss)
Ol. cajuputi..... 4.0 (ʒ j)
Tr. belladon.....30.0-60.0 (ʒ j-ij)
Lin, camphoræ. q. s...ad. 240.0 (ʒ vij)
Sig.: Apply frequently.
—*Hare in "Practical Therapeutics."*

Pruritus.—The internal treatment, writes Geo. T. Jackson, consists of cod-liver oil, iron, and good diet, with tincture of cannabis, 0.7-2.0 (♏ x-xxx), t. i. d. for a ten-year-old child, or two per cent. pilocarpine solution, 1.0 (♏ xv) once a day, the patient remaining in bed and covered with blankets until he sweats for two or three hours. Carbolic acid 1.0 (♏ xv) a day, bromide of potash, phenacetin, and antipyrine are also of value. For local treatment a 2 to 5 per cent. solution of naphtol may be rubbed in every night and a bath with naphtol-sulphur soap taken each second night. Sulphur, tar, carbolic, salicylic or boric acid ointments have their advocates. Baths followed by inunctions of sweet oil, cod-liver oil, tar oil, or lard, or baths alone of alum, soda, or corrosive sublimate are often useful. The affected parts may be wrapped with good effect in some protective dressing, such as rubber sheeting or cotton.—*"Diseases of the Skin."*

Furuncles of the Ear.—If the auditory canal be filled or unclean, advises A. Rupp, it must be syringed out with a 2 to 5 per cent. carbolic solution followed by sodium bicarbonate solution as hot as can be borne. Dry the canal with absorbent cotton, and if the membrana tympani is intact fill with:

℞ Hydrarg. bichlor..... 0.3 (gr. v)
Glycerin .....
Alcohol .....aa. 30.0 (ʒ j)

which is to remain in some minutes and then be drained off. Close canal lightly with borated or salicylated absorbent cotton. If the membrana is deficient fill canal with powdered boric acid, and close as before. When furuncles are at the inner end of the canal near the membrana, a leech or two in front of the tragus affords much relief. Boils should be incised only where pus has formed and has no outlet.—*G. T. Jackson's "Diseases of the Skin."*

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SATURDAY, DECEMBER 29, 1900.

ABSENT TREATMENT AND DEATH CERTIFICATES.

NEW YORK CITY for the past few weeks has been the scene of a most interesting spectacle. Publicly and in high places the community has been assured that there is no such thing as sickness; that Christian Science can cure all that the human mind understands to be disease and that all that is necessary to eradicate tuberculosis, cancer, smallpox, typhoid fever, or even to be able to raise the dead, is to become a *healer* and *think about it.*

All of this we regret to say we have heard before; and the medical profession has been unable to make much headway against the present wave of ignorant fanaticism that is so profitable to the high priests thereof; but there is one phase recently brought out that can be remedied and we commend it most heartily to the Health Board and the County Medical Society for investigation.

It appears from the testimony, which is being so ably brought out by the learned counsel in the Brush will case, that patients of Christian Scientists do occasionally have human manifestations such as scarlet fever, tuberculosis, etc., and that they do die. We learn that cases of contagious diseases are not reported to the Board of Health and that death certificates are being granted by a Dr. Pease, a so-called legal practitioner, without the formality of seeing the patient.

Absent treatment, even to the point of granting death certificates, is too much, and we register a protest.

BELLEVUE HOSPITAL REFORM.

A FEW weeks ago when the revision of the charter of the City of New York was being discussed, we approved unreservedly of the changes outlined by the Committee on Revision in which it was proposed to vest the governorship of Bellevue Hospital in a board of unsalaried trustees.

We refrained from specifying what almost every medical man in the city knew, that the nature of the abuses and slack management were due not to any one person's management, but to the system.

The daily papers have rather ruthlessly torn the veil of charity which we refrained from disturbing from one or two scandals of the hospital; so that we may perhaps feel less delicacy than we did before in expressing our opinions.

We note that these scandals are of a very popular nature, such as arouse a Sunday afternoon indignation on the part of the readers of bright literature, which indignation is usually satisfied by learning that the brutal nurses were suspended or dismissed.

The energetic investigations that the Charity Commissioner has been making are very commendable; but what will happen when Mr. Keller is succeeded by a less enterprising man? And how does it happen, if we may ask, that these abuses have just been brought to light? Moreover, there are less spectacular abuses that are not so easily disposed of; abuses that deal with food, cleanliness, clothing, and sleeping quarters; abuses that cannot be judged by the mouth of two witnesses, but that are the outcome of political jobbery.

Undoubtedly the argument is true that many of the alcoholics at Bellevue are better off than in the gutter, and many of the patients are better fed than they ever were in their own homes. But there are others whose standard is not so low, and when we are considering the standard of New York's greatest public hospital, we do not judge by the requirements of a tramp; but by the city's ability to provide for its poor. And this is just the point; the city has provided amply; but the provision has been badly administered, and it is high time to change.

NEW METHODS IN CHARITY, AND AT LESS COST.

At a meeting of the First New York State Conference of Charities and Correction, held in the Senate Chamber of the Capitol at Albany, November 21, 1900, the Chairman of the Committee on the Mentally Defective, Dr. Wm. P. Spratling, Superintendent of the Craig Colony for Epileptics, said, among other things:

"Mr. Roberts, State Comptroller in 1896, said that the State that year had the sum of $19,323,245 invested in permanent buildings and improvements for the care of the insane and other defective and dependent beings. He also stated that the State was spending annually $5,200,000 to maintain the people in these buildings." The author of the paper offered the following suggestions by which the first cost of preparing to take care of this vast army might be lessened, and the cost of their maintenance might also be reduced: (1) Prevention; (2) maintenance; (3) construction; (4) education of a suitable kind.

For prevention, laws should be enacted, if possible, by which the marriage and intermarriage of defective and dependent epileptics and other weak-minded persons might be prohibited. It is a question whether or not the Constitution of the State would admit of this being done; at any rate, there can be no harm in making an effort. We are certain that if the State had an effective law of this kind, and honestly carried it out, very much would be done toward cutting off a blasted progeny.

The word maintenance is largely an elastic term. Maintenance should not mean education or attendance upon these defectives by nurses and physicians especially trained for the purpose, but should mean providing them with food, lodging and ordinary care.

It is a well-known fact that a very large number of the insane are absolutely incurable. Then why go on building vast architectural piles in which these people are kept? We suspect that the reason why this has been the practice to this time has been to meet a local pride. The residents of the community like to point to one of these magnificent structures and say, "We did it; we are responsible for that magnificent institution." It would be much better if they could say, "There stands a model State institution; cheaply, but effectively built, and one that meets every purpose to which it is put."

Dr. Spratling also urged the construction of small hospitals in connection with the great cities, where the acutely insane could be taken just as soon as they become mentally unsound. These hospitals should be small; they should be presided over by the best brains that money can buy; they should be centers for teaching. Build dormitories in connection with them, if necessary, and let the physicians go there and live and acquire a real knowledge of insanity. Too many physicians, we fear, have but little knowledge of insanity, epilepsy, and the allied neuroses. The place to treat insanity is really at the patient's home when the disease first appears. But how can that be done unless the physician have a good knowledge of the disease he is treating?

The author also thinks that far less money should be spent on about one-fourth of the chronic insane. These people should be colonized in vast agricultural communities, and put at all sorts of trades, farming and gardening. They should lead a healthy outdoor life. The idea should be to spend far less money on this class and far more money on the acutely insane, who would be in the small hospitals. We think that the State should, and will yet, come to this. It will have to if it does its full duty by the people it has undertaken to protect.

The author of the paper thinks that the word "custody" should be abolished and the word treatment substituted instead. Custody means mere care, *i. e.*, the bathing, dressing and feeding of patients. Every patient should be under good care and treatment, for no human being can be dogmatic enough to say what case is curable and what is not. Proper education of a general kind for the State's wards has never been put into practice. Many of them must be under State care as long as they live. Put them in school; teach them simple things, things that they can use as State charges and that will help to reduce the cost of their maintenance.

Instead of building vast architectural piles, small homes should be built. Instead of putting from $550 to $3000 in a building per bed, put in $300 or $400. That is ample; that will build the very best kind of buildings, buildings that will stand for a generation.

To sum up, the following, the author thinks, is required: (1) Prevent insanity, epilepsy, imbecility, idiocy, feeblemindedness, as far as possible, by forbidding afflicted persons to marry or intermarry. (2) Maintain *at less cost* the cases that are chronic and incurable, and maintain, under proper treatment, *at greater cost, to stimulate recovery*, those that probably can be

cured. (3) Build less expensive structures in which defective and dependent State charges shall live. (4) Give those that ought to have it an education that they can use, either in the institution that cares for them, that the cost of their maintenance may be lessened, or that they may use in the outer world when they leave the institution, when the State has done its work well and turned them back into the great business current as nearly normal men and women as science and art can recreate them.

Some one in Scotland has estimated that the average man, striking the balance between the banker and the pauper, is worth $400 a year to the community in which he lives. The distinguished Lunacy Commission in the State of New York has ascertained that the sum of $6000 is spent, first and last, upon every individual committed to a State Hospital for the Insane. Surely it does not require a very acute mind to see on which side the burden of cost presses hardest and longest.

ECHOES AND NEWS.

NEW YORK.

Academy of Medicine's New Officers.—The New York Academy of Medicine held its annual election of officers last week. The officers elected were: President, Dr. Robert F. Weir; Vice-President, Dr. Charles L. Dana; Recording Secretary, Dr. John H. Huddleston; Trustee, Dr. Alexander A. Smith; Corresponding Secretary, Dr. Louis F. Bishop; Member of the Committee on Admissions, Dr. John Van Doren Young; Member of the Committee on Library, Dr. Charles L. Fisk.

An Institution to Watch—The School of Health, with principal offices in New York, was incorporated December 19th, to found and carry on a School of Health in New York, with branches in other cities, for mental and physical culture, instructions in sanitary laws, the laws of heredity, the evil effects of tobacco, alcohol and morphine upon the human system, and the chemistry of cooking, food values and their adulterations. The directors are: Dr. Ella A. Jennings, Dr. Egbert Guernsey, John J. Plunkett, Sylvester M. Weimer of New York; George Donaldson, Cliff Side, N. J., and Mrs. E. C. Hazard of Shrewsbury, N. J.

Bequest to Eye and Ear Infirmary.—William C. Schermerhorn, Second Vice-President of the New York Eye and Ear Infirmary, at Second Avenue and Thirteenth Street, presented that institution with $75,000 on Thursday, December 20th. The money is to be expended in the construction of a pavilion for patients having disease of the ear.

New Charter and Health Officers.—Members of the Charter Revision Commission say that the fears which have been expressed by residents of outlying boroughs regarding the convenience of the new Health Board provisions are based on a misapprehension of the charter. They say it gives the Health Commissioner full power to establish as many branch offices as are required.

A Subject for Investigation.—Commissioner Keller is still hard at work investigating Bellevue. Last week he received a verbal complaint from an alienist of this city that there was a "combination" between two of the insanity experts who examine all supposed lunatics brought to Bellevue, whereby rich patients were turned over to the physicians' private practice and were also recommended to certain sanitariums.

Obituary.—Dr. John E. Losee, one of the oldest and most prominent physicians in northern Dutchess County, died Saturday at his home in Upper Red Hook, aged seventy-four years. He had practised his profession for forty-seven years in that locality. He was born in Saratoga County, N. Y., and graduated from the Albany Medical College in 1852. After several months in the old New York Hospital in 1853 he entered active practice in Upper Red Hook.

Dr. Frederick Osborn Lloyd died last week at Hamilton, N. Y., of heart disease. He was at one time attached to the staff of the Presbyterian Hospital in this city and practised medicine here. His widow and a son survive him.

Dr. John Henry Fruitnight died last week at his home, 161 West Fifty-seventh Street, aged forty-nine years. He was graduated from the College of the City of New York in 1872 and from the Bellevue Hospital Medical College three years later. Dr. Fruitnight's work as a specialist in the diseases of children was highly appreciated by his professional confrères.

Dr. Charles Sabin Taft, one of the surgeons who attended President Lincoln immediately after the President was shot in Ford's Theater, died last week at his home, 39 South Seventh Avenue, Mount Vernon, of cancer of the throat.

Medical Society of the State of New York.—The preliminary program of the ninety-fifth annual meeting of this Society is just to hand. The following papers will be presented: "Recent Progress in the Treatment of Pneumonia," by James King Crook, New York; "Congenital Dislocation of the Shoulder with Report of Cases," by Daniel W. Marston, New York; "Appendicitis and Menstrual Irregularities," by A. L. Beahan, Canandaigua; "Small Hospitals and Their Administration," by Louis Nott Lanehart, Hempstead; "The Necessity of Greater Conservatism in the Use of Vasodilators, in Certain Cases of Cardiovascular Disease," by Louis Faugeres Bishop, New York; "Hernia of the Urinary Bladder," by William S. Cheesman, Auburn; "Treatment of Prostatic Hypertrophy," by Ramon Guiteras, New York; "The Medical Society

of the State of New York: Its Past and Future," by Albert Vander Veer, Albany; "What is Rodent Ulcer?" by John A. Fordyce, New York; "Noma of the Genitalia," by Andrew McFarlane, Albany; "Esophoria or Latent Squint," by Francis Valk, New York; "Changes in the Crystalline Lens During Accommodation," by Lucien Howe, Buffalo; "Treatment of Chronic Purulent Otitis Media," by James F. McKernon, New York; "Tuberculosis of the Iris," by W. F. Mittendorf, New York; "Can Interstital Keratitis Be Prevented in the Offspring of Syphilitic Parents?" by Peter A. Callan, New York; "Operations for Deformities Following Pott's Fracture," by W. O. Plimpton, New York; "Indications for Operations Upon the Mastoid," by Wendell C. Phillips, New York; "Indications and Limitations of the Vaginal Route of Attack in Pelvic Diseases in Women," by J. Riddle Goffe, New York; "What Complications of Pregnancy, Labor, or Puerperium Justify Abdominal Section?" by William Warren Potter, Buffalo; "The Treatment of Persistent Suprapubic Fistula Resulting after Ovariotomy," by Willy Meyer, New York; "Results Following the Cure of Chronic Defects on the Vesical Function," by Eugene Fuller, New York; "Ectopic Pregnancy, Primary Rupture, the Opportune Time for making Diagnosis," by George McNaughton, Brooklyn; "An X-Ray Study of the Causes of Disability Following Fractures Involving the Elbow Joint," by Samuel Lloyd, New York; "Contributions to Abdominal Surgery," by James E. Keely, New York; "Loose Cartilage in the Knee-Joint," by P. R. Furbeck, Gloversville; "Pus in the Peritoneal Cavity," by Robert T. Morris, New York; "The Indications for and Limitations of Spinal Cocainization in Surgery," by George R. Fowler, Brooklyn; "The Results of Nephropexy for Movable Kidney," by George M. Edebohls, New York; "Relations Between Certain Diseases of the Skin and the Menstrual Function," by L. Duncan Bulkley, New York; "Hysterical Anesthesia and Analgesia," by B. C. Loveland, Syracuse; "Deep Breathing as a Curative and Preventive Measure," by John H. Pryor, Buffalo; "Masturbational Neuroses," by William C. Krauss, Buffalo; "Arthritis Deformans," by Herman Mynter, Buffalo; "Tenosynovitis Calcarea," by Carl Beck, New York; "The Treatment of Puerperal Fever," by Herman J. Boldt, New York; "Belladonna *vs.* Scopolia," by Reynold W. Wilcox, New York; "Disinfection Within and Without the Body in Diphtheria," by M. A. Veeder, Lyons; "After-Thoughts on Diphtheria," by J. N. Love, New York; "Fatty Degeneration of the Heart," by Thomas E. Satterthwaite, New York; "Recent Experiences with Erythromelalgia," by Henry L. Elsner, Syracuse; "A Simple and Accurate Method of Substitute Infant-Feeding," by Henry Dwight Chapin, New York; "Leprosy in the Hawaiian Islands," by Charles E. Davis, Albany; "The Ponometer and its Value in Determining Arterial Tension," by Henry L. K. Shaw, Albany; "Pleuropericardial and Diaphragmatic Adhesions. Illustrated by Colored Wax Models," by D. H. Goodwillie, New York; "Differential Diagnosis in Diseases of the Spinal Cord," by E. D. Fisher, New York; "The Immunizing Effect of 'Rag Weed' in Hay-Fever," by H. Holbrook Curtis, New York.

"Contribution to Pelvic Infection in Women," by Charles A. L. Reed, Cincinnati, President American Medical Association; discussed by: J. F. W. Ross, Toronto, Ontario; L. S. McMurtry, Louisville, Ky.; W. E. B. Davis, Birmingham, Ala.; Bache McE. Emmet, New York; William M. Polk, New York; George M. Edebohls, New York; James Clifton Edgar, New York; James P. Boyd, Albany; "Report of Five Cases of Ovarian Tumors with Twisted Pedicles," by George B. Johnston, Richmond, Va.; "Surgery of the Spleen," by J. Collins Warren, Boston, Mass.; discussed by: Albert Vander Veer, Albany; Charles McBurney, New York; Robert F. Weir, New York; Robert T. Morris, New York; Thomas Roddick, Montreal, Canada; "The Pathology and Diagnosis of Intestinal Obstruction," by J. B. Murphy, Chicago, Ill.; "Inguinal Hernia," by Merville Ricketts, Cincinnati, O.; "Gastrojejunostomy in Gastrectasis," by A. H. Cordier, Kansas City, Mo.; "Toxin of the Colon Bacillus," by Victor C. Vaughn, Ann Arbor, Mich.; "The Treatment of Delirium Tremens by the Intravenous Infusion of Saline Solution," by James P. Warbasse, Brooklyn; "Tetanus Following Clean Operation: Report of Cases," by Joseph W. Bissell, New York; "The Advances in State Medicine," by M. J. Lewi, New York; "Aseptic and Antiseptic Precautions in Dental Surgery," by J. B. Ransom, Dannemora; "Report of Case of Brain Tumor; Operation; Improvement," by William M. Leszynsky, New York, and James H. Glass, Utica.

PHILADELPHIA.

Attendance at Medical Colleges.—The number of students at the various medical schools at present is as follows: Jefferson, 752; University of Pennsylvania, 566; Medico-Chirurgical, 416; Woman's Medical, 164; total, 1898. In addition there are 1224 students of dentistry and 505 students of pharmacy.

Reception to Dr. Weir.—Dr. Robert F. Weir, of Columbia University, visited this city December 19th as the guest of Dr. W. W. Keen. After being tendered a reception and dinner at the University Club, Dr. Weir operated in Dr. Keen's clinic at the Jefferson Hospital, one case being a nephrectomy for sarcoma of the kidney.

Graduation of Nurses.—A class of seven nurses received diplomas from the Jefferson Hospital training school December 20th. Dr. E. P. Davis, in presenting the medal of honor, stated that the course of three years was none too long and that nurses from the so-called training schools which gave short courses of lectures and but little practical training were not recognized by the College

of Physicians, which has an office open day and night for the supplying of trained nurses to private cases.

The Philadelphia Medical Journal.—With the opening of the New Year, Dr. George M. Gould will retire from the editorial management of the *Philadelphia Medical Journal*, and the duties he has so ably carried on will be assumed by Dr. John Hendrie Lloyd and Dr. Julius L. Salinger. Relief from a threatened financial embarrassment has been averted, through a change of ownership, Mr. Morwitz, the publisher of *The German Demokrat* of Philadelphia, now controlling the majority interest. It is rumored that Dr. Gould will be connected with a new periodical enterprise. Should such be the case, Dr. Gould will undoubtedly command the good wishes of the profession at large.

Early Restoration of Function in Sutured Nerve.—Dr. Ernest La Place reports a case of practically immediate restoration of function following suture of the ulnar nerve. The nerve had been severed for a period of sixteen months. When the ends were prepared for suturing a distance of one and three-quarter inches intervened, but this was overcome by stretching. The ends were carefully apposed and a large number of sutures inserted. On the morning following the operation it was noticed that the boy had perfect motion of the hand. As no observation was made earlier it is not known if motion was present immediately after the operation. Sensation in the fingers is curiously altered in that pricking at one part is felt in another. This is supposed to be due to the fact that the corresponding proximal and distal ends of the fibers were not joined. The case presents points in support of the theory of the electrical nature of nerve force.

Medicine and Surgery of the Coming Century.—Drs. H. C. Wood and J. William White, in articles recently written for a local paper, give their views regarding the future of medicine and surgery. Dr. Wood, after stating the inability of man to foretell what the coming century will bring forth, says, "Only this seems probable, namely, an enormous increase of our knowledge of what may be considered the natural remedies for disease. Very many diseases produce within the human body the antidote which enables the forces of the system, if they do triumph, to achieve their victory over the forces of disease. Most, if not all, contagious diseases seem to leave behind them in their victim some substance which protects him in the future, more or less imperfectly, from the same disease. The approaching rewards of medical investigation which shall be of the most value to mankind will probably lie in this province of study. We now treat most contagious diseases by modifying the symptoms and trying to keep the patient alive until Nature shall have completed her processes and cured the disease. It may well be that in the future the physician will have the natural antidote in his hands and put an end at once to the disease; or, perchance, by the previous use of the antidote he may prevent the attack of the disease—vaccinating, so to speak, the patient against all contagious diseases as he does now against smallpox. Whether man shall eventually reach the condition in which the doctor shall be eliminated from the body politic because his occupation has been destroyed by the removal of disease, who can tell?"

Dr. White states that so great an advance has been made during the century that the surgery of 1800 was more closely allied to that of Hippocrates that to the surgery of 1900. Dr. White is not pessimistic as was Mr. Lyme when he told Lord Lister in his early days to remain in Edinburgh, remarking at the same time that it really seemed as though there were not much left to do in the way of advancing surgical science. Looking forward is speculation, but "it seems safe, however, to affirm that before the coming century is very old many conditions now beyond the reach of surgery will come well within its field for either prevention or cure. The discovery of the cause of cancer will be made and will be followed by greatly improved methods of treatment. As we already know the cause of tuberculosis, its cure also should soon be possible in infinitely more cases than at present. Blood-poisoning in its many forms, already through antisepsis so greatly diminished in number and severity, should with the advance of the serum treatment, and of other yet-to-be-discovered methods, almost disappear. Lockjaw should be wiped off the list of surgical complications. All the infectious diseases now so fertile in producing conditions requiring surgical intervention will almost certainly be done away with by preventive inoculation, or will be easily and rapidly cured by the use of the respective antitoxins. New anesthetics, new antiseptics, new means of modifying vital processes and destroying harmful intruders into the living organism may confidently be anticipated. The problems of life are being investigated in ways which may at any moment result in a revolution in all our methods of approaching questions involving living matter. It is not impossible that both the medicine and the surgery of the future will deal directly with the individual cells, the aggregation of which make up all living organisms. It is not rash in the present condition of experimental and inductive science to predict that the advances in surgery during the twentieth century will outstrip even the epoch-making discoveries of the nineteenth."

CHICAGO.

Evanston Hospital.—Plans for improvements and additions to the Evanston Hospital, which will require an outlay of nearly $50,000, have just been completed. The plans include the erection of the new Herman D. Cable Memorial Building, a new isolation hospital, a boiler-house, and improvements to the present buildings. The

Cable Memorial Building will be a handsome four-story structure of brick and terra-cotta.

Prevalence of Influenza.—Eight deaths have been reported this month from influenza. One physician reports that he has had 35 cases of the malady within ten days; another that he has treated 30 cases within a week.

Prevalence of Typhoid Fever in St. Luke's Hospital.—Within the last three weeks a dozen or more cases of typhoid fever have developed among the nurses, physicians and employees of this hospital. The hospital authorities are at a loss to account for the outbreak. Every resource has been exhausted to discover the cause of infection, but without success.

Obituary.—Dr. Ephraim Ingals, one of the pioneer physicians of Chicago, died on the morning of December 18th, at the age of seventy-eight years. Death was due to heart failure. For many years Dr. Ingals was closely associated with the development of higher medical education in Chicago, both as a lecturer in and contributor to the medical institutions of the city. At the time of the affiliation of Rush Medical College with the University of Chicago he gave $25,000 to aid in paying off the college debt and to found a Chair of Therapeutics and Preventive Medicine. He also gave $10,000 to the Northwestern University Medical School for the equipment of its laboratories.

New Dormitory of Provident Hospital.—The beautiful dormitory of this hospital, built to give colored women facilities for becoming trained nurses, was dedicated December 21st. It is a model of all that is convenient and comfortable for the training of nurses. It is complete in every respect from the diet kitchens in the basement to the dormitories and study rooms on the third and fourth floors. Although adjoining the hospital and opening into it, the hall is entirely separate, and gives perfect quiet and freedom to the nurses when not on duty, which in their work is so necessary to enable them to endure the severe strain. It was a year ago that Nathan N. Freer donated $12,000 for the building of Esther Freer Home in memory of his mother. Realizing the general advance in the cost of building and building materials, the donor enlarged his original gift by adding $3520 to cover the cost of construction, and $2595 to meet the cost of furnishings.

Regulations for Lodging-Houses.—Dr. M. Meyerovitz, Chairman of the Committee on Lodging-Houses and Sanitation of the State Board of Health, recommends the following regulations for lodging-houses: Mattresses must be made of washable rubber. Houses must be fumigated at least once a week. Better toilet arrangements must be provided. Each lodging-house shall have a temporary isolation room for use in case of an outbreak of a communicable disease, and before the local health board is able to act.

Illinois Northern Hospital.—The new infirmary at this institution for the insane, located at Elgin, was recently opened, the cost of its erection being $38,000. The building will accommodate 110 patients.

Sentence of James Armstrong.—Judge Kohlsaat has imposed a sentence of one year in jail and a fine of $500 on James Armstrong, President of the Metropolitan Medical College. The defendant was convicted recently of using the mails to defraud in connection with a "diploma mill." Sentence against Thomas Armstrong, who was convicted, and John H. Randall, who pleaded guilty to the same offense, will be passed at the next term of court in March. James Armstrong made a hard fight, and he now threatens to prolong the legal battle in the higher federal courts. The Armstrongs first began business in 1895 with the "Illinois Health University." This was a "diploma mill" on a small scale, and the Illinois State Board of Health, through its secretary, soon closed the doors of the bogus institution. Then the charter for the Independent Medical College was used. The charter of the college was revoked some years ago. The same kind of "graduating" work was continued under the name of the Metropolitan Medical College, although a restraining order was issued in the State court against the officials doing business under this charter.

GENERAL.

Typhoid at Galveston.—Dr. Charles T. Peckham, Surgeon of the United States Marine Hospital Service, stationed at Galveston, who has been in charge of the Marine Hospital work since the storm, confirms the reports from Galveston that typhoid fever is raging on the island. He estimates that there are now between 400 and 500 cases in the city. He said: "I think the disease is directly traceable to the cistern water. We have two kinds of water, cistern and the Alta Loma water, which is piped some fifteen miles. A layer of mud was spread all over Galveston after the storm, which soon dried, and left a layer of the baked filth that had come up from the sewers and the drains. The wind blew the dust over the city and into the tops of the cisterns. In that way we think the disease originated."

Yellow Fever and Mosquitoes.—Press reports say that a number of experiments are being tried at Marianao to test the Finlay mosquito-yellow-fever theory. Soldiers are said to be sleeping in clothing used by infected patients, but are protecting themselves from mosquito bites. The reports thus far are said to be favorable.

Influenza in St. Petersburg.—The influenza epidemic in St. Petersburg is so severe that the mortality returns for the last week have been the highest for a decade. The disease has swept the city, and every office has vacant desks, and every

private table has or has had vacant chairs. The whole city has been swept. The weather is conducive to the spread of the disorder, being changeable, with snow and slush alternating.

Bubonic Plague in San Francisco.—In a report to Gov. Sayers December 20th, on the bubonic plague situation at San Francisco, State Health Officer W. F. Blunt says that the disease continues to spread there and that twenty-two cases are known to have occurred since March 6, 1900. He charges that the press and certain other interests in San Francisco are making strenuous efforts to suppress the fact of the existence of the disease there. He quotes Dr. J. J. Kinyoun, Federal Quarantine Officer at San Francisco, as reporting officially: "I would state that it is my belief that the area of infection is gradually growing wider, so that now there are only three blocks of the Chinese quarter proper in which there has not occurred since March last a case of plague. The conditions which will obtain in the next six months will be, in my opinion, conducive to a further spread of the disease. I believe other cases occurring in San Francisco are being reported under another name."

Illegal Practice in Virginia.—Great difficulty is experienced by the medical profession in the State of Virginia in preventing the illegal practice of medicine in that Commonwealth. The responsibility rests chiefly with the officers whose duty it is to enforce the laws on the subject. The offence of practising without a certificate from the Medical Examining Board of the State is a misdemeanor which can be prosecuted only before a Justice of the Peace. The Secretary of the State Board has publicly asserted that these magistrates, for the most part, do not sympathize with the law against unlicensed practitioners and hence that many well-founded prosecutions fail. All sorts of subterfuges are employed to evade the statute, as in the case of one quack who asserted that the charges which he made to his patients were not for his services as a doctor, but merely for the use of his horse and buggy. The Medical Society of Virginia is endeavoring to put an end to this state of things by securing an amendment to the existing law or its better enforcement.

Smallpox Situation in the United States.—During the fiscal year ended June 30, 1900, 14,998 cases of smallpox, with 731 deaths, in 44 States and Territories, were reported. The Surgeon-General reports that the disease has been of a mild character, the death-rate being less than 5 per cent. This disease is considered one which it is the duty of local authorities to suppress, but, following out the plan heretofore adopted by the Service, the assistance rendered to State and local boards of health has been by the distribution of publications and the detail of officers to make investigations, and personally to explain the methods to be adopted in the suppression of the disease in communities requesting such advice.

CORRESPONDENCE.

THE HALL OF FAME.

To the Editor of the MEDICAL NEWS:

DEAR SIR: Among the distinguished Americans already chosen for the Hall of Fame of New York University, physicians are conspicuous for their absence. Surely this is not because America has produced no physicians whose work would compare favorably with that of the men who have been selected. Perhaps it is because the physician is content to carry on his pain-destroying and life-saving efforts without having the same noised abroad, and himself applauded by the populace. Certainly he deserves all the more praise for displaying a modest, noble spirit.

It is too late to contend for a place among the first thirty Immortals, but we should see to it that the profession is represented among the next number of representatives chosen.

France has already honored her Pasteur and England her Simpson; why should not America honor Dr. Cranford W. Long, the discoverer of the pain-dispelling power of ether? All the more honor is due him since he made that discovery before Sir J. Y. Simpson discovered the similar property of chloroform.

A. JUDSON CHALKLEY, A.M.,
Miami Medical College.

Cincinnati, O., November 30, 1900.

THE NEW YORK STATE TUBERCULOSIS HOSPITAL.

To the Editor of the MEDICAL NEWS:

DEAR SIR: It is a cause for regret to the friends of the antituberculosis movement in the State of New York that difficulty should be encountered in the selection of a site for the first State Hospital. One would suppose that certain broad principles underlying the modern sanatorium treatment of this disease had been settled by the experience and discussion of the past fifty years. One would also suppose that these principles were universally applicable whether the sanatorium were located in England, Germany, or in the State of New York. No country in the world, so far as I know, has deliberately selected a site within one or two miles of a State prison and an asylum for insane convicts, as admirably suited to the treatment of tuberculosis. New York State is the first civilized community that is considering the advisability of taking such a step in the selection of Dannemora, Clinton County.

It would appear to me that such a step would be inexpedient, unless there were absolutely no other place available in the Adirondacks, to which region the Trustees are, by law, limited in their choice, or unless the spot selected with this incubus of an insane and convict population presented special climatic or other advantages. The first of these alternative suppositions may be dis-

missed because, as a matter of fact, the Trustees have inspected more than twenty other sites, any one of which would be possible. A recent visit to Dannemora, an inspection of the site offered at that place, conversation with the prison physician, a study of his plea made in favor of Dannemora, at the joint hearing before the State Board of Health and the Forest Preserve Commission, together with a study of the annual reports of the New York Weather Bureau, have convinced me that the second supposition may also be dismissed. A good deal of the medical evidence offered to prove the special advantages for this site has no bearing on the question, and would not appeal to a jury of physicians as entitling it to preference over other places. I refer especially to the pneumonia, typhoid, and tuberculosis statistics. The statistics of the mean temperature and the mean annual rainfall are at variance with the official reports of the Weather Bureau of the last ten years. The entire plea suggests the ease with which any place may be made to blossom out as a veritable Garden of Eden for the unfortunate consumptive, if sufficiently watered and fertilized by local enthusiasm and the imagination of its promoters. In spite of the cheerless and even depressing influence of the Dannemora surroundings, as compared with other places in theAdirondacks, nobody will deny that it offers some of the requirements laid down by the Trustees for the selection of a site; it has proper elevation, exposure, and water supply. Nor will anybody deny that incipient tuberculosis may be cured at Dannemora—or indeed at any place in the Adirondacks—still, no one would think of erecting a private sanatorium there, and it is the plain duty of the Trustees to act for their poorer fellow-citizens with the same discriminating judgment.

Let us not be blinded to the fact that the main arguments in favor of Dannemora are the gift of the land and the labor for the construction of the buildings. This is tempting bait. Yet it is to be hoped that the Trustees will not yield to it. The natural and commendatory desire on the part of the prison officials to secure labor for their convicts should not lead the Trustees to subordinate the interests of the consumptive poor to those of the convicts.

This is to be only the second State Hospital for incipient consumptives in this country, and upon its success may depend the fortunes of the whole movement in this and other States. Patients are to go there voluntarily, and much, perhaps all, depends upon getting them there early; there ought to be no prejudice in their minds against the place and its associations; no risks should be taken in the choice of site that would entail hesitancy on the part of the patient. Furthermore, be it remembered that the incipient consumptive is not a helpless invalid easily controlled through his very helplessness, but well enough to assert his own individual prejudices.

At some future time, when the movement in this State is itself no longer in the incipient stage and when the advantages of early sanatorium treatment of consumption have won their way into the hearts of our tenement-house population, the objections against Dannemora may weigh less in the balance, but for the present, at least, Dannemora ought to be eliminated from the list of available sites. Alfred Meyer, M.D.

801 Madison Avenue, New York, December 18, 1900.

OUR LONDON LETTER.

[From Our Special Correspondent.]

London, December 15, 1900.

ESTABLISHMENT OF AN EPILEPTIC COLONY IN CHESHIRE—OPENING OF CANCER RESEARCH LABORATORIES AT THE MIDDLESEX HOSPITAL—MAJOR ROSS ON THE PREVENTION OF MALARIA.

Preparations for the establishment of an Epileptic Colony in Cheshire are making rapid progress. The scheme owes its existence to a munificent gift of $400,000 of the David Lewis Trustees. About 400 acres of land have been purchased at a pleasant and healthy site. The equipment will be on a generous scale and when the scheme is completed there will be no institution in England equal to it. The area of the buildings covers 3000 yards and the site is to be laid out in a beautiful park. The remainder of the estate will be available for recreation, and for gardening and farming pursuits, in which the inhabitants of the colony will employ a portion of their time. They will live in detached homes in the form of two-story dwellings, some accommodating twenty, others twenty-four, inmates. This arrangement possesses great advantages over the plan of one large residence for the whole of the patients and is a feature to be commended. There will also be an infirmary, a recreation hall, and workshops. It is estimated that the population of Manchester and Salford (for which this colony is principally available) comprises 1100 epileptics. Probably 300 will be accommodated. They will grow most of their own food, look after poultry and cattle and perform farm work in general.

The opening of cancer research laboratories marks a new departure at the Middlesex Hospital which it is hoped will assist in dealing with the disease which next to tuberculosis is the most fatal to mankind. The unsolved and apparently insoluble problem of the origin of cancer will be systematically attacked. There are special reasons why the work should be undertaken here. Of the great London hospitals, the Middlesex alone affords a refuge to inoperable cases of cancer and a handsome block of wards was completed early this year for the reception of those who can no longer hope for any further relief from the surgeon. Some sixty of these unfortunate patients are constantly within the walls. The duty of investigating the causation of cancer and thus laying the foundation-stone of its treatment was specially laid on the hospital by several

of its earlier benefactors. So long ago as 1791 the original founder of the cancer wards, Mr. Samuel Whitbread, gave the hospital the sum of £4000 with the specific instructions that the money should be applied to "the relief of persons affected with cancer and the investigation of a complaint which, though extremely common, is, both with regard to its natural history and cure, but imperfectly known." Throughout the century the wishes of the charitable founders have been carried out, but their hope has not been realized. The patients have received every possible help in alleviating their "dreadful disorder," but the cause remains unknown.

Major Ross, whose investigations in malaria are so well known, read a paper on "Malaria and Mosquitoes," at a meeting of the Society of Arts. He said he believed that it is chiefly in consequence of the disease that civilization does not progress in the tropics as in temperate climates. West Africa, a rich country within a few days' sail of England, is practically a wilderness. Our colonies are in fact cemeteries. He regretted that the British nation is making no serious effort to combat malaria. The hypothesis that malaria is caused by the bite of the Anopheles suits all the facts. Both occur in warm climates, prevail during summer and the rainy season, are connected with stagnant water and rank vegetation, attach themselves to valley and village, and are enormously prevalent in the poorer dwellings of natives. The time is now ripe for a movement against malaria. The prophylactic use of quinine, the use of mosquito nets and window screens, and the destruction of larvæ around the house, should be attended to in every malarious place. He still adheres to the method proposed by him to the Indian Government nearly two years ago—careful surface drainage. He has never said it would be possible to exterminate mosquitoes throughout Africa. He has always referred expressly to large towns.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

PENETRATING GUNSHOT WOUNDS OF THE CRANIUM —AMPUTATION OF GRITTI—OSTEOPLASTIC OPERATIONS AT THE KNEE—PULMONARY EMBOLISM AND ITS RELATION TO PHLEBITIS OF THE EXTREMITIES—BILIARY DIATHESIS AND HEPATISM.

Walther, at the Société de Chirurgie de Paris, Nov. 7, 1900, in behalf of Morestin reported the details of an observation of penetrating gunshot wound of the cranium, treated successfully by trephining, exploration and extraction of the bullet. The thirty-year-old patient, who had attempted suicide, presented three wounds in the right temporal region. One projectile had followed an entirely superficial course; another was lodged in the bony wall of the cranium from which it was readily disengaged; and the last had penetrated the skull. Notwithstanding the absence of cerebral signs, the skull was trephined, the torn dura mater lifted up and the bullet found with the probe at only a slight depth very fortunately. It was easily removed and prompt uncomplicated recovery followed.

Reynier believed that Morestin was in duty bound to have made the exact diagnosis of penetration first of all, by means of the apparatus of Contremoulin, for instance. Not in every case does direct primary intervention result as happily as in this. For example, in a recent case of his own, by the method of Contremoulin he succeeded in locating in the right hemisphere near the surface a ball which had traversed the brain from the left side. It is self-evident how fruitless would have been all attempts at access to it from the side of penetration.

Delens eighteen months ago had the following experience: A ball had penetrated the supra-orbital region; upon exploration with the probe it seemed to have passed upward and inward. Radiography, however, fixed its situation in the occipital region. From this he argued that in the presence of any penetrating gunshot wound of the skull, the surgeon should first of all resort to radioscopic examination before intervening in any other manner.

Reclus added that it is absolutely necessary to do a primary exploration for the purpose of enlarging the bone wound, removing carefully spicules of bone, pieces of hat, hair and bullet, and other possible foreign substances carried in by the ball, of disinfecting and draining at least the mouth of the wound and membranes of the brain.

Quenu disagreed with all the preceding speakers by stating that in his experience and opinion the bullet is a dangerous foreign body usually septic. He therefore believes that to the primary interference advocated by Reclus should be added a gentle, but thorough, probing for the ball. The frequency with which it lies near the surface at the point of entrance makes immediate primary removal a safe rule, with the advantage of disinfection and drainage of the entire route it has taken.

Tuffier, although he supported the diagnostic value of radioscopy in such cases, stated that even it might prove a dangerous disturbance of the patient in certain cases, because the changes of position, which are so material in order to obtain the proper views of the ball, might renew intracerebral hemorrhage. Consequently, he felt that all immediate molestation of the patient should be delayed for a short time.

Potherat, continuing the same subject, at the session of November 14th, detailed a case in which the cranium had been penetrated by a projectile of very small caliber. The conduct of the surgeon had been possibly too hesitating. In the month of December, 1899, he was called to see the victim of a hunting accident, who presented in the right temporal region three small wounds.

After being unconscious for four hours the patient recovered with imperfect speech; and a few days later suffered briefly from fever, right hemiplegia and aphasia. All were due no doubt to the cerebral lesion caused by the penetration of one of the shot. At the autopsy a perforation was found of one of the small shot through the base of the skull and an abscess over the convolution of Broca. The projectile was found only after filtration of the cerebral substance.

Lejars reported for Szczypiorski (Mont-Saint-Martin) three cases of the amputation of Gritti for traumatism of the leg. In the first patient a crushing accident had almost entirely detached the leg and primary amputation was resorted to. In the other cases the amputation was secondary. For one of these patients, also the victim of a crushing accident, he did the amputation at the site of election. Gangrene of the stump set in. In the other case he followed conservative therapeutic measures, but secondary hemorrhage, gangrene of the damaged member and abscess in the popliteal space appeared, which necessitated sacrificing the leg. The amputation of Gritti is little in favor in France, because it so often gives a stump upon which the patient cannot support himself. The cause of the difficulty is usually a secondary late displacement of the patella, which, by imperfect apposition at the time of operation, does not become firmly attached to the stump of the femur. On the other hand, many advantages are offered and usually obtained through the osteoplastic technic by which the sawn surface of the patella is at once fixed to the end of the femur. In these cases lasting adhesion between the two bones is usually established from the outset.

Merklen, at the Société Médicale des Hopitaux de Paris, November 9th, gave his observations on pulmonary embolism, secondary to phlebitis of the lower extremities. In his first case a puerperal phlebitis with embolism at the invasion, a long febrile state and later progressive involvement of both lower extremities resulted fatally within a few hours from asphyxia due to pulmonary embolism about twenty-three days after the appearance of venous symptoms. His second patient suffered death in the same way about five weeks after the onset of a phlebitis secondary to a large hematoma of the calf caused by a crush. Like his first patient, this one had early embolism in the veins with pulmonary congestion. The course of both was simple, but their outcome grave. A very moderate fever, manifested by an evening rise to only 37.8° C. and by a disturbed digestion, had been present at first and recurred eleven days before death. Emboli due to such phlebites during their onset are with rare exceptions benign, because they are due to the migration of clots, small, still friable and little adherent, developed in the venules. The late emboli on the contrary are grave and often mortal, because they consist of large coagulations separated from the thrombotic mass in a large venous trunk. Most authors attribute the majority of these emboli to the breaking off of the free extremity or center of the thrombus before this is completely organized. This explanation holds only if under some particular condition the process of organization is not perfect after the ordinary delay. There is another more rational hypothesis in the view of the author. These late emboli are more probably due to secondary, delayed exacerbations of the latent phlebitis in the large vein, followed by the formation of new large clots not immediately adherent and also easily movable like those of any phlebitis at its onset. Thus the pathogenesis of these late emboli is the same as of early emboli, because they are the simple result of practically a new inflammation of the veins which may manifest itself only with slight fever. In the treatment, therefore, it is necessary to take the temperature of patients most carefully during phlebitis and to insist on complete rest in bed for several weeks after absolute apyrexia. Only then may the affection of the veins be considered ended. This conclusion, moreover, conforms with the rule of Pinard, who keeps in bed for one month after the last elevation of temperature all cases of childbirth complicated with phlegmasia. The prognosis is generally favorable in phlebitis with early embolism, except in the latent affection of the large veins with late exacerbations, especially in light prolonged infections, in virtue of their evident effect in causing mortal emboli. The real method of such clot mobility is as little understood as the formation of the clot itself within the vein. It is hardly likely that a clot once adherent to the wall of the vein, organized and contracted, should become detached. The hypothesis of new formations upon it and their migration is much more probable. In literature the thesis of De Brun states that the latest appearance of such an embolism was three months after the formation of the thrombosis. Unfortunately, nothing is said by this author as to the presence or absence of a latent phlebitis during this long interval. Phlegmasia of childbirth is most apt to cause the precocious benign embolism, but is singularly unlikely to initiate fatality in this way, since Pinard has found but four such cases in ten years at the clinic in Baudelocque. A valuable distinction, if it were practicable clinically, would be one between resolving and obliterating phlebitis.

Rendu disagreed with the hypothesis of the cause of these late emboli. Admitting their usual gravity, he said, they are due to fragments of the original thrombotic mass which begins to disintegrate about three weeks after the beginning of symptoms.

Triboulet felt that the most important point to establish is, in view of their prognosis, a distinction clinically between embolism precocious, apyretic, without apparent phlebitis, often present at about the eighth day after childbirth and usually of a favorable termination, on the one hand,

and, on the other hand, phlebitis with fever, successive exacerbations, various degrees of infectiousness and very commonly with fatal issue from migrating clots.

Launois called attention to the researches of Cornil as to the histology of such thrombotic masses. After a variable time he found that they are invaded by embryonal connective tissue cells, which proceed from the wall of the vein, interlace, and form a network entangling in its meshes the different elements of the clot into a compact mass, thus obliterating more or less completely the lumen of the vessel. One understands, therefore, the persistence of edema for a long time after the cure of the phlebitis. Very commonly this late edema is due, not only to alterations in the venous and lymphatic circulation, but also to local trophic changes.

Barth said that sometimes there exists merely gross obstruction of the vein and sometimes organization of the clot, by the process discovered by Cornil. The subsequent history of these cases makes it likely that when edema persists this condition obtains.

Hallopeau reported a case of late fatal embolism six months after the original phlebitis.

Vaquez, at the session of November 16th, resumed the same subject and advanced the following theory: The so-called precocious emboli are due to the disintegration of a clot which in its essence, according to Cornil and Marie, has little tendency toward organization, belonging really to that phase of phlebitis which one might call the *prcobliterating period,* but often going on to the existence of a *latent phlebitis with embolism.* Such precocious emboli are always small fragments, therefore rarely dangerous unless infectious. On the other hand, the late emboli are large masses of clot floating about, detached because originally their adhesion to the venous wall was insufficient, and often deadly from their size alone. Unfortunately, this exact anatomopathological classification cannot be clinically distinguished. In fact, it may be that, through successive attacks of phlebitis, precocious benign fragmentary emboli form in fifteen, twenty, thirty days or even later, while, on the other hand, an embolic mass may coincide with a total obliteration of the vessel only a few days after the appearance of the phlebitis. His own rule in treating these cases is the following: Stiffness of joints and atrophy of muscles, with later contractures, may follow too prolonged immobilization; therefore, to avoid these untoward consequences, for only three weeks after the onset of phlebitis in the large veins of the inferior extremity, especially if bilateral, is absolute immobilization carried out by some of the well-known gutter-splints. After this time, if the large trunks have ceased to be tender, if there have been no rises of temperature, and if the edema is frankly decreasing, he carries out maneuvers aimed to favor the collateral venous circulation and consisting only in superficial effleurage of the skin and in partial passive movements of the toes and foot. Later, at the twenty-seventh to the thirty-fifth day, the muscles are massaged, the joints more actively moved and the venous trunks left as far as possible undisturbed. The patient is allowed to move about in bed a little, but not to flex his trunk. Following the thirty-fifth day this treatment becomes gradually more and more pronounced, the patient is allowed to lift himself in bed and, finally, to get up out of it; he is not allowed to use elastic stockings or supports of any kind. A light gauze bandage may, however, be applied. Complete cure is usually present by the fiftieth day under this management. If relapses occur, characterized by elevation of temperature, local tenderness and recrudescence of the edema, he resorts immediately to the same processes *seriatim,* beginning with the immobilization. Replying to an inquiry from Merklen as to the usual status of the solid clot causing the late massive emboli, he stated that commonly sufficient adhesion occurs between the wall of the vessel and the mass. It is precisely when such are not formed at all, or imperfectly, that separation transpires. However complete relief of obstruction of the vein in this period, as claimed by Rendu in the last session, is uncommon. When edema promptly disappears it is due to the fact that collateral circulation, at first impaired, is restored, rather than to the fact that the main channel is partially or entirely opened.

Glenard read notes on cases, occurring during the past ten years, of the so-called hepatism of Gilbert and Lereboullet, described by them in the last session. These included various states of dyspepsia, chlorosis, etc. All were apparently of hepatic origin, yielding to appropriate treatment of the liver, and assignable to the category of these two authors as expressions of biliary diathesis or hepatism.

SOCIETY PROCEEDINGS.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, Held November 19, 1900.

The President, Parker Syms, M.D., in the Chair.

General Septic Peritonitis.—Dr. Irving S. Haynes said that for the diagnosis of septic peritonitis the quality of the pulse is of more importance than its frequency. At the beginning the pulse is apt to be thin, thready, distant, easily compressible, and the arteries easily emptied under the finger. The reason for this is that the blood of the system is gathered to a large extent in the dilated blood-vessels of the abdomen. The intense inflammatory reaction leads to a reflex relaxation of all blood-vessel in the abdominal cavity and these are capable of containing, when dilated, most of the blood of the body. Only later in the peritonitis does the hard, wiry pulse usually

set down as characteristic of peritonitis develop. When all cases of peritonitis were inevitably fatal this character of the pulse preceding the fatal termination was a pathognomonic sign of the condition. Patients with peritonitis, seen early enough for operation and recovery, in Dr. Haynes' experience, had an average pulse-rate not much above a hundred. In a series of fatal cases the pulse-rate averaged 130. In cases of localized peritonitis or inflammation of the intestine the hard wiry pulse considered pathognomonic of peritonitis by the older physicians frequently occurred. Its prognostic significance is not as absolutely unfavorable as it was formerly thought.

Fever.—As a rule the fever of peritonitis does not run very high. General septic peritonitis may occasion a rise of temperature to 102° F. It may not run above 101° F. The average is rather under than over 103° F. and only exceptionally does a temperature of 104° F. occur. Of more diagnostic and prognostic significance than either the pulse or the temperature is the appearance of the patient. The face is drawn and frightened-looking, even though the patient may not feel fear. There is a tenseness about every muscle that reminds one of the corresponding condition in the abdominal muscles. It is as if the whole system realized the danger and used the ordinary modes of expression to make clear its unconscious feeling of danger.

Prognosis.—General peritonitis patients always die if not operated upon; they may die even after operation. It is well worth the while to give then the only chance for their life no matter how unpromising the condition. If the operation can be performed on the average not longer than four hours after the development of the peritonitis the prognosis is good. In Dr. Haynes' experience recoveries have taken place only in patients who were operated on in from two to seven hours after the onset of symptoms. Some patients were operated on when symptoms had existed longer than this, but they invariably died. Should apparently moribund patients be operated on? Many surgeons refuse to operate under such conditions, because, they argue, it serves no good purpose, only creates prejudice against abdominal surgery and makes the statistics of these operations appear worse than they really are. It is not easy to decide, however, just when a case passes from the operable into the inoperable stage of the disease. The patient will surely die without an operation, but he may survive even if desperately ill if operated upon. Dr. Haynes recently performed an operation contrary to the advice of two consultants, who considered the case hopeless, and to the surprise of all recovery took place.

Early Diagnosis and Statistics.—The important condition for success in the operation is early diagnosis of peritonitis. The first symptoms are pain in the abdomen which is sudden, continuous and then spreading, followed by collapse and the symptoms of shock. When these symptoms occur it is not only useless but criminal to delay. The patient's only hope lies in operation and the sooner this is done the more are the chances of recovery. Forty-six per cent. of Dr. Haynes' cases recovered. At least three of the fatal cases, however, were operated on at a time when hope was practically out of the question. One of the cases had been suffering from peritonitis, due to a ruptured peritoneal ulcer, for twenty-seven hours when the operation was done. In another the symptoms had persisted for twenty-four hours and the peritonitis was caused by a rupture of the intestine through a cancerous ulcer. In a third fatal case rupture of the appendix occurred the day before the operation was undertaken.

Technic.—One of the most important considerations with regard to operation for peritonitis is the location of the incision. If it is suspected that rupture of the stomach or of the appendix has occurred, of course, the position of the incision would be fixed by this fact. If, however, there are no localizing symptoms, the incision should be made in the median line just below the umbilicus. This incision can be enlarged upward or downward as may be necessary. In penetrating wounds of the abdomen followed by peritonitis the original wound should be enlarged. After the incision is made and the peritoneum has been opened the character of the exudate in the peritoneum will furnish information as to the point of origin of the peritonitis. If particles of food are seen, there has been a rupture of the stomach or duodenum. If the pus has a distinctly fecal odor, there has probably been a rupture of the appendix. If there is bile in the peritoneal cavity, it points to a pathological condition of the bile-tract, while if in females the pus wells up from the pelvis, yet has no fecal odor, rupture of a pus tube is the lesion.

Abdominal Flushing.—The abdomen should be thoroughly flushed out with normal salt solution. The tube that conveys the solution into the abdominal cavity should be carried to every part of the peritoneal cavity. This should be done before looking for the lesion. Sponging has been recommended, but it is too slow and not every part of the peritoneal cavity can be thus reached. If the sponge is not used very gently or if it is at all rough in texture, the delicate peritoneal covering of the intestine is injured and adhesions will form. Evisceration acts on the patient as would a blow on the solar plexus. The resulting shock is serious, persistent and is felt at once. If the intestinal coils are much distended an incision should be made in them at a point opposite the mesenteric attachment. As the gas escapes from them care should be taken that none of the intestinal contents find their way into the abdominal cavity. Hydrogen peroxide in full strength may be used without danger in the abdominal cavity. Its use, however, does not seem advisable. Flushing appears to be the best way of cleaning the soiled peritoneum.

Drainage.—The best form of drainage is iodoform gauze wrapped in rubber tissue, which pre-

vents adhesions and facilitates the changing of the dressing. If the purulent material within the abdomen is thick, a tube should be used as well as the wick of gauze. If the gauze is left long enough to hang down somewhat at the patient's side, it assists in the removal of purulent matter. The dressing should be frequently changed. Some operators prefer, if possible, to close up the abdomen, but this seems inadvisable, because it adds to the risk. Where drainage is used, the abdominal wall will subsequently be weaker than before and a hernia may occur. But a ventral hernia in a living subject is capable of cure. "A beautifully sutured wound in a corpse availeth nothing."

Stimulation During Operation.—Strychnine is very valuable. Care must be taken, however, not to overstimulate. The idea is not to overexcite a weakened organism, nor to whip a frail one into efforts beyond its power, but to lift up the tottering forces. Whiskey may be given almost *ad libitum* with a hypodermic syringe. It takes many a syringeful to affect the ordinarily healthy individual, and still more is needed to favorably affect a weakened patient suffering from an intense toxemia. When the heart is weak the stimulating effect of frequent swallowing must not be forgotten. Spoonfuls of water should be given occasionally and the reflex improvement of the heart's condition through the vagus reflexes will soon be noticed.

Varieties of Septic Peritonitis.—In discussion Dr. Dowd said that septic peritonitis is no longer considered to be the necessarily fatal disease that it was thought. For any instructive consideration of the mortality, its forms must be taken into account. In a certain number of the patients, while there is undoubtedly an inflammatory tendency in the peritoneum, true pus is not present, but only serum. In a second severe type seropus is present. Sometimes this is true, thin pus, in which case the peritonitis is only mild. Some surgeons speak of it as cloudy serum. This frequently produces a decided febrile reaction, but the inflammation is not of a virulent character. In either of these forms of peritonitis a large number of successes follow operation. In a third variety of peritonitis thick pus occurs with shreds of fibrin on the peritoneal surface of the intestine and here and there shut in abscesses. These cases very seldom recover, no matter how thoroughly drained or cleansed. In a certain number of cases there may be thick pus at the site of the original infection and cloudy serum or simple serum in the peritoneal cavity. Most of these cases get well after simple drainage of the original abscess. For true septic peritonitis, however, the best treatment is undoubtedly hot saline solutions used abundantly and as far as possible carried to all parts of the abdomen. During the last ten years we have learned to respect the peritoneum and now realize that there is much less necessity for drainage than was formerly thought. If the abdominal cavity can be thoroughly washed out, peristalsis encouraged and perhaps some portion, at least, of the intestinal contents removed in these cases, there seems no doubt that there will be a decided improvement in the statistics of operation for septic peritonitis.

Character of Infection.—Dr. Benjamin T. Tilton said that many of the cases successfully operated on are true generalized peritonitis, but consist of a series of pus foci here and there, many of the coils of the intestine not being bathed in pus, however. In virulent general peritonitis it is probably impossible to save the patient. Any sign of reaction on the part of the peritoneum against the infection is encouraging and good results will sometimes occur even in most unpromising cases. The hope for the future of peritonitic surgery lies in getting the cases earlier from the general practitioner. The dry method of cleansing the intestine by sponging is of little practical value. Bacteria are left in the peritoneal cavity and injury is inflicted on the intestine by the fiber of even the finest sponge. Drainage should not be depended on as the only hope, but the peritoneum should be trusted more than has been the custom.

Dr. Brothers said that the question of raising the foot of the bed for heart stimulation is important, but it must be remembered that drainage of the peritoneum may be even more important and this can be best accomplished often by raising the head of the bed. As to the relative merits of sponging or flushing, if there is an especially virulent focus of infection, as in wounds of the intestines, this should not be scattered all over the peritoneal cavity by flushing, but local cleansing by sponging will be safest. Only when there is surely generalized peritonitis should flushing of the peritoneal cavity be employed.

Dr. Erdmann said that he has limited the use of flushing more and more of late and has been very well satisfied with the results. There is serious danger that the salt solution will carry infective material beyond the limits of infection at the moment and so prove dangerous. In one case where he employed flushing for peritonitis after a wound in the stomach, the patient died two days later and some spaghetti was found in the lesser peritoneal cavity. Whether this had been carried in by the flushing could not be determined. The anatomical relations of the foramen of Winslow, however, are such that this accident must always be considered possible.

Hot Vaginal Douche.—Dr. James Hawley Burtenshaw said that hot water has been used for pelvic affections almost from time immemorial, yet nothing is less understood than the proper principle on which it should be employed. The abuse of it may do infinite harm. Hot water first dilates and causes congestion. As Dr. Goodell used to say, if a finger be plunged for five minutes into water as hot as can be borne it becomes red and swollen. It would be impossible to remove a ring that slipped off the finger rather easily before. After fifteen minutes, however, the tissues of the finger shrivel and become pale. The second effect is the one sought for when

vaginal douches are employed. On this principle two quarts of water which flow from an ordinary fountain syringe placed three feet above the patient and which will take by actual experiment two minutes to flow will do harm rather than good. It adds to the congestion, intead of relieving it. Four quarts are scarcely better. At least three gallons of water should be used and it should be allowed to flow into the vagina for about fifteen minutes.

Vaginal Douche Technic.—The patient should be instructed to lie flat on her back with hips slightly elevated and the shoulders low. A large douche vessel or a pail of water from which the water flows by siphon action should be employed. The water should be as hot as can be borne and should be at least 107° F. The douche should be taken every day except for the two days before and after menstruation. If the patient has not proper arrangements for taking the douche in bed it may be taken in a bathtub, a Y-tube being used to connect both the faucets and so have the water constantly of the desired temperature. In order to raise the patient's hips a couple of bricks covered with oilcloth or a roll of blanket which will prevent the water from flowing up around the rest of the body should be employed. Dispensary patients are recommended to put two boards over a washtub slightly separated from one another, so as to allow the water after use to flow into the tub.

Indications for the Douche.—All of the congestive conditions of the pelvic organs are benefited by the hot douche. Acute and chronic nephritis, perimetritis, parametritis, ovarian pain subinvolution and leucorrhea. As a rule, the douche should be used without the addition of medicaments. For leucorrhea the following prescription is given:

℞ Alum .....
Zinc sulphate.....
Sodium biborate.....
Carbolic acid.....aa. ʒ j
Water .....ad. ʒ viii

A tablespoonful of this should be added to the last quart of the douche. Bicarbonate of soda, one level teaspoonful to each quart of water, will often be found a useful remedy for milder cases of leucorrhea. As a rule antiseptics should not be used. They are poisonous to the general system and as the result of the macerating action of the large douches much more of these substances are absorbed than might be anticipated. In mucopurulent discharges dilute wood vinegar will sometimes be found of service. Large vaginal injections, it has been demonstrated, reduce the bactericidal power of the fluids of the vagina. They should not be used during pregnancy. It has been recently suggested that a large rectal douche as hot as can be borne and retained as long as possible affects more of the tissues of the pelvis than even the vaginal douche. They are, however, very annoying to patients and the rectum does not stand hot water well.

Constant Douche Temperature.—Dr. J. Riddle Goffe said that an arrangement by which the water for the douche could be taken directly from the hot water faucet is preferable. In this way a constant temperature is secured and the effect is surer. In a douche apparatus the water has time to cool considerably during the fifteen minutes the douching should last. After operations in the vagina the practice of giving a large hot douche undoubtedly does harm. The tissues are made anemic, their vitality is diminished and failure to unite will frequently occur. In undeveloped uteri the effect of the douche is not to produce congestion or stasis of the blood, but stimulation of the uterine circulation. For this purpose large injections are very important.

Douche Contra-Indications.— Dr. F. P. Hammond said that it was the length of time a douche lasted, not the quantity of water used, that should be regulated. With a small perforation of the nozzle of the vaginal syringe a small quantity of water could be made to serve every purpose of the large douche. Anemia constitutes a serious contra-indication to the use of the large vaginal douche, especially if it is accompanied by headache. The excess of blood invited to the pelvis may cause sleeplessness or even collapse. One-fourth to one-third of the blood in the circulation may be drawn to the pelvic tissues and this the anemic cannot stand. Acute salpingitis constitutes another contra-indication, because the warmth and congestion stimulate bacterial growth. Endometritis fungosa or adenosa also contra-indicates the douche, because stimulation is very undesirable in this condition.

BOOK REVIEWS.

Atlas and Epitome of Gynecology. By Dr. Oskar Schaeffer, Privat Docent of Obstetrics and Gynecology in the University of Heidelberg. Authorized Translation from the Second Revised and Enlarged German Edition. Edited by Richard C. Norris, A.M., M.D., Surgeon-in-Charge Preston Retreat, Philadelphia; Gynecologist to the Methodist Episcopal Hospital and to the Philadelphia Hospital, etc. With 207 Colored Illustrations on 90 Plates and 62 Illustrations in the Text. Philadelphia: W. B. Saunders & Company, 1900.

This is a notable addition to the excellent series of hand atlases introduced into this country by the same publisher. Two distinct works really are embodied in the compass of the one book, the set of beautiful reproductions in colors of the original water-color drawings made in the Heidelberg clinic with their descriptive and elucidating text, and a concise exposition of the pathology, diagnosis and treatment of all the commoner gynecological diseases. This latter section is written from a strictly practical standpoint, the more purely theoretical considerations with microscopical and chemical notes being contained in the portion relative to the drawings.

While written by a surgeon the book is a strong plea for conservatism in treatment, an advantage, however, to the general practitioner whose aim is usually in this direction and who will find many useful plans of non-operative therapeusis outlined. For assistance in diagnosis the author has embodied an abundance of differential tables and a large number of colored diagrams give a clear idea of the significance of the various findings obtained by bimanual examination, the sound, etc. The colored plates adequately cover the field and represent all the lesions likely to fall into the hands of the non-specialist and also many of the rarer disorders, while enough cannot be said in praise of their beauty of execution, which is nothing short of marvelous in a book of such moderate price. We know of no other book that from a practical standpoint contains so much useful information on the subject as this one, and cannot recommend it too highly either for students or practitioners.

Diseases of the Chest, Throat and Nasal Cavities, Including Physical Diagnosis and Diseases of the Lungs, Mediastinum, Heart and Aorta, Laryngology and Diseases of the Larynx, Pharynx and Nose and Special Diseases of the Thyroid Gland and Oesophagus. By E. Fletcher Ingals, A.M., M.D., Professor of the Diseases of the Chest, Throat and Nose, Rush Medical College (in affiliation with the University of Chicago); Professor of Rhinology and Laryngology, Chicago Polyclinic, Laryngologist to the St. Joseph's Hospital and to the Presbyterian Hospital, etc. Fourth Edition. With Two Hundred and Fifty-Five Illustrations. New York: William Wood & Co., 1900.

While not in the least deprecating the constantly-growing tendency to specialism or in any way underestimating the benefits accruing from the division of labor that the present breadth of medical science has rendered almost imperative, one cannot help but wonder sometimes what the final result is going to be. The principle is being carried so far, there are wheels within wheels and specialists in specialties with so meticulous a subdivision of knowledge and skill, and subspecialty is being saddled upon specialty with such frequency that the analogy of the lesser fleas upon the little fleas seems painfully lifelike and one trembles for the ultimate *reductio ad absurdum* which apparently is not wholly a danger too remote to be dreaded. And, as a natural sequence of this endless multiplication of interests, comes a corresponding increase in the literature of the science which has been pouring out during the last few years at a geometrical ratio of progression appalling to contemplate. But, in spite of this making of books which is without end, most of them can find but a limited class of readers and by reason of their ultratechnicality are unfit for the every-day usage of the busy general practitioner. It is therefore with unwonted pleasure that one speaks of so thoroughly practical and useful a book as that under discussion. It is the work of a specialist, but a specialist in the broader sense who has known how to broaden his field and consider not the disorders of a single organ or function, but a large and comprehensive group of diseases which are, however, topographically and physiologically so intimately related that they form a closed circle that must be dealt with in its entirety to be satisfactorily handled. Of the specific merits of the book itself it is hardly necessary to speak in detail, the prominence of its author and the fact that this is its fourth edition sufficiently guarantee its value. Such changes as progress in medicine has demanded have been made and new matter and illustrations added, so that the work can in every way be recommended to the practitioner as affording reliable and modern information on the very complex subjects of the etiology, diagnosis and treatment of the lesions of the heart and respiratory system.

Rhinology, Laryngology and Otology and Their Significance in General Medicine. By E. P. Friedrich, M.D., Privat Docent at the University of Leipzig. Authorized Translation from the German, Edited by H. Holbrook Curtis, M.D., of New York. Philadelphia and London: W. B. Saunders & Company, 1900.

In recent years the realization has gradually come that the laryngologist, rhinologist or otologist can only be successful in his chosen profession when he appreciates how much pathological changes in these special organs are dependent on diseased conditions of the general system. On the other hand, the general practitioner has learned that preliminary and pathognomonic symptoms of many constitutional affections are often to be found in the throat, nose and ear. Dr. Friedrich's book presents itself at once as an index of these feelings and as an auxiliary to further mutual helpfulness on the part of specialism and general practice for the diagnosis of general systemic conditions and local symptoms in the upper respiratory tract. The subject is, of course, a very large one, and even Dr. Friedrich's 315 pages fail to do more than treat the salient points. In fact, there is in the book a sense of the compression that has been exercised in making it and one would wish for more detailed information on certain points.

As a rule, the treatment of the subjects selected is at once interesting and suggestive. We are especially glad to notice that American literature has not been neglected in making the book. Some of the articles, as, for instance, that on ictus laryngis occurring in the course of obesity, gout and diabetes, will furnish new matter for thought to most general practitioners. The laryngeal affections of typhoid and scarlet fever and the aural complications of influenza are notably well done. The chapters on affections of the larynx, nose, pharynx and internal ear in nervous diseases are worthy of attentive study in our day when nervous diseases are occupying so much of general attention.

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